AMERICAN JOURNAL OF

PUBLIC HEALTH

and THE NATION'S HEALTH

The 80th Annual Meeting, Cleveland, Ohio
October 20 – October 24
Headquarters: Public Auditorium

Volume 42 **JULY, 1952** Number 7

Published Monthly at 374 Broadway, Albany 7, N. Y., by the

AMERICAN PUBLIC HEALTH ASSOCIATION, Inc.

1790 Broadway (at 59th Street), New York 19, N. Y.

THE AEROVAP SYSTEM

AUTOMATIC
CONTINUOUS
NOISELESS
ODORLESS
STAINLESS

A REVOLUTIONARY METHOD FOR THE CONTROL OF FLIES, MOSQUITOES, GNATS, MOTHS AND A VARIETY OF OTHER SMALL FLYING INSECTS INDOORS.

The AEROVAP System is an original development. It is based on the heat vaporization of synthetic insecticides and has been the subject of an extensive entomological and toxicological research program conducted by American Aerovap, Inc. The unique process of automatically vaporizing Lindane for the continuous control of flying insects indoors is exclusively patented (U. S. No. 2,541,637).

On September 21, 1951, the Interdepartmental Committee on Pest Control, a group comprised of Federal Agency representatives responsible for safeguarding public health, published a statement on the process of vaporizing Lindane (and DDT) that indicated it was an acceptable method provided certain restrictions were observed.

In spite of the patent protection and in spite of the cautions set forth in the Interdepartmental Committee statement, a number of poorly and cheaply constructed vaporizers have recently appeared on the market for the purpose of vaporizing Lindane for indoor insect control.

American Aerovap, Inc. contends that such uncontrollable equipment can be a health hazard. This stand, long taken, has recently been confirmed in a report published in the May 24, 1952 issue of the Journal of the American Medical Association.

In the AEROVAP Instrument there is embodied the best available components to give long life and high quality performance. The instrument is thermostatically regulated and carefully engineered to control chemical vaporization rates within milligram tolerances. There is not a single part that could be omitted, or even cheapened, without detracting from performance or without introducing a health hazard. In short nothing has been sacrificed in our endeavor to give the public a safe and efficient insect control system.

While it is naturally understood that the Interdepartmental Committee and the Pesticide Committee of AMA do not commercially endorse the Aerovap Instrument, American Aerovap, Inc. urges that their well-founded and published opinions be sought and carefully read. Copies will be made available on request as will be any other information on this new and highly efficacious approach to indoor insect control.

AMERICAN AEROVAP, INC. Dept. 872 170 WEST 74th ST., NEW YORK 23, N. Y.

in pelvic inflammatory disease.....

rapid response *with* Chloromycetin®

CHLOROMYCETIN produces prompt clinical response in the mixed infections commonly found in pelvic inflammatory disease. "In mixed infection [pelvic cellulitis and abscess] CHLOROMYCETIN appears to be superior to penicillin, streptomycin or sulfadiazine."[1]

"The clinical response to chloramphenicol consisted of marked symptomatic improvement, usually within 48 hours....

"Women who had large pelvic abscesses were treated so effectively with chloramphenicol that posterior colpotomy, with drainage of the abscess, was not necessary in effecting a rapid cure in any of our patients who were treated with this antibiotic from the start."[2]

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is supplied in a variety of forms including:

CHLOROMYCETIN Kapseals®, 250 mg., bottles of 16 and 100.

CHLOROMYCETIN Capsules, 100 mg., bottles of 25 and 100.

CHLOROMYCETIN Capsules, 50 mg., bottles of 25 and 100.

CHLOROMYCETIN Ophthalmic Ointment, 1%, ½-ounce collapsible tubes.

CHLOROMYCETIN Ophthalmic, 25 mg. dry powder for solution, individual vials with droppers.

1. Greene, C. G.: Kentucky M. J. *50*:8, 1952.
2. Stevenson, C. S., et al.: Am. J. Obst. & Gynec. *61*:499, 1951.

MEDICAMENTA VERA · PD CO.

Parke, Davis + Company

American Journal of Public Health
and THE NATION'S HEALTH

Official Monthly Publication of the American Public Health Association, Inc.

Volume 42 — July, 1952 — Number 7

CONTENTS

PAGE

Community Planning for Rehabilitation 779
Walter Wenkert, M.P.H.

New Trends in Vocational Rehabilitation 784
Mary E. Switzer

Disabled Men Work Again 787
Stanwood L. Hanson

Rehabilitation of Disabled Miners 791
Kenneth E. Pohlmann

Viability of *Escherichia coli* in Acid Mine Waters 795
J. Mehsen Joseph and Donald E. Shay

Further Inquiry into the Antibacterial Properties of Cationic and Anionic Detergents 801
Berkley H. Johnson, Hoyo Migaki, and E. C. McCulloch, D.V.M., Ph.D.

Continued on page vi

Expressions of opinion and statements of supposed facts are published on authority of the writer under whose name they appear. These are not to be regarded as expressing the views of the American Public Health Association, Inc., unless formally adopted by vote of the Association.

Contents of previous issues of the American Journal of Public Health and The Nation's Health can be found by consulting the Reader's Guide in your Library.

Published by the American Public Health Association, Inc., at 374 Broadway, Albany 7, N. Y.
Executive Office, 1790 Broadway at 58th St., New York 19, N. Y.

NOTICE:—Subscription $10.00 per year for United States, Cuba and Mexico, South and Central America; $10.50 for Canada; and $11.00 for other countries. Single copies $1.00 postpaid.

Copyright, 1952, by American Public Health Association, Inc.

Address correspondence regarding editorial contents and manuscripts to C.-E. A. Winslow, Dr.P.H. Editor, 1790 Broadway, New York 19, N. Y.

Address correspondence regarding subscriptions, advertising, reprints, etc., to American Public Health Association, Inc., 374 Broadway, Albany 7, N. Y., or 1790 Broadway at 58th St., New York 19, N .Y.

Entered as second-class matter at the Post Office at Albany, N. Y., September 17, 1932, under the Act of March 3, 1879.

Acceptance for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917.

A is for Ambot*... Cutter proof that safety comes in convenient packages

Made with the same care and exactness as famous Cutter Saftiflask® Solutions used in hospitals, Ambots are rubber-stoppered vials containing Distilled Water, Normal Saline or Dextrose 50%. Cutter Ambots meet rigid U. S. P. requirements. Available in convenient sizes for office and medical bag use.

*Cutter Trade Mark

Ambots/CUTTER

CUTTER LABORATORIES • Berkeley, California

Health Knows No Boundaries 806
Willard L. Thorp

Role of the School Physician in Today's Schools 813
C. Morley Sellery, M.D.

Present-day Views on School Nursing 818
Margaret A. Cree

An Appraisal of Various Methods Employed To Analyze the Clinical Effectiveness of Caries-Inhibitory Agents 825
John W. Fertig, Ph.D., and Neal W. Chilton, D.D.S., M.P.H.

Progress in School Dental Programs 834
Donald J. Galagan, D.D.S., M.P.H.

Mortality Statistics as a Direction Finder in Home Accident Prevention . . 840
I. Jay Brightman, M.D., M.S.P.H., Isabel McCaffrey, and Leonard P. Cook

Clinical Application of the Theory of Accident Prevention in Childhood . . 849
Harry F. Dietrich, M.D.

EDITORIALS:

Some Impressions of the Fifth World Health Assembly 856
The Job of a Health Officer 858
A School Epidemic of Tuberculosis 859
Diet and Vital Resistance 860

Clearing House on Public Health Salary Information and Personnel Needs . 861

Credit Lines 864

Books and Reports 868

A Selected Public Health Bibliography 874
Raymond S. Patterson, Ph.D.

Books Received 876

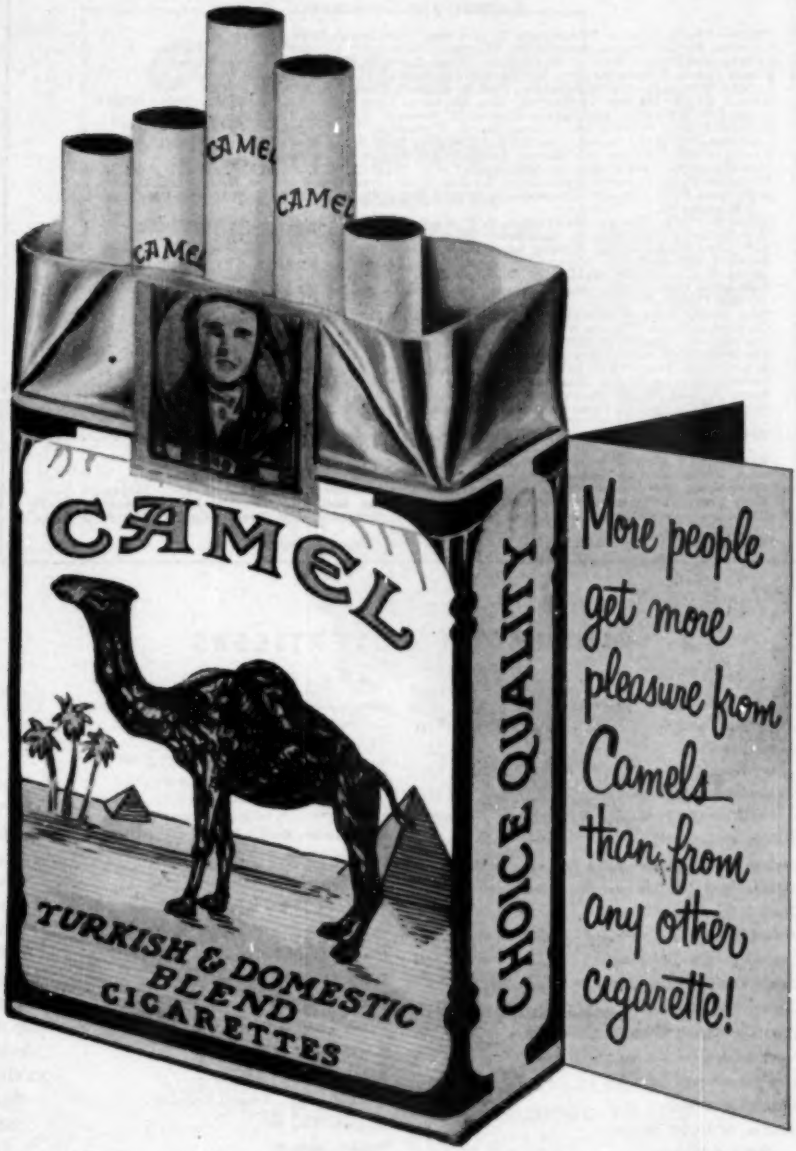
Association News 878
Study of Nutrition Services in Health Departments. Southern Branch Meeting. News of Affiliated Societies. Applicants for Membership. Schools of Public Health Accredited for 1952–1953. Eightieth Annual Meeting, Cleveland, Ohio, October 20–24: Advance Registration Form, List of Hotels, Hotel Reservation Form, and Street Plan of Cleveland Showing Location of Housing Bureau Hotels.

Employment Service 891

News from the Field 894

Conferences and Dates 904

Reprint prices furnished upon request


CAMEL
CAMEL
CAMEL
CAMEL
CAMEL
TURKISH & DOMESTIC BLEND CIGARETTES
CHOICE QUALITY
More people get more pleasure from Camels than from any other cigarette!

A.P.H.A. AFFILIATED SOCIETIES AND BRANCHES

Society and Secretary

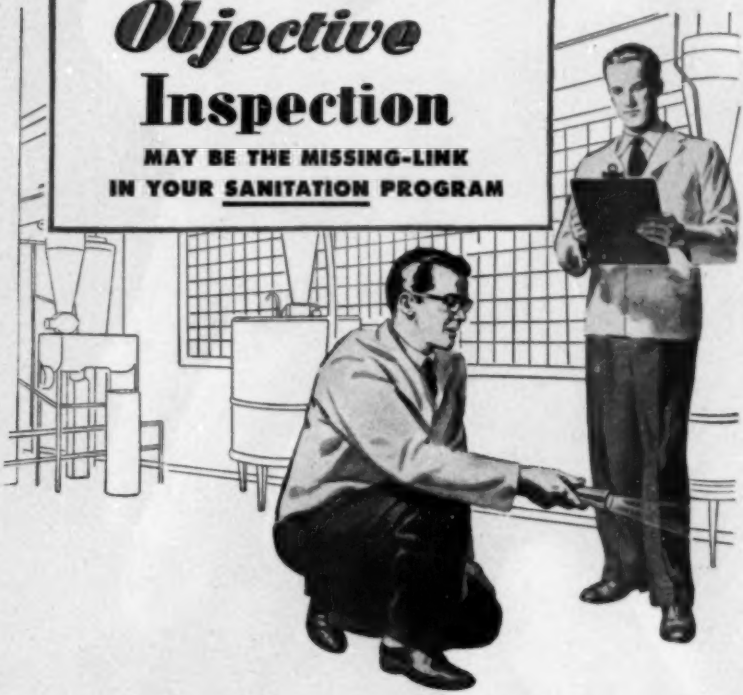
Arizona Public Health Association, Betty Crane, State Health Dept., Phoenix
Colorado Public Health Association, Graydon Dorsch, 634 Commonwealth Bldg., Denver
Connecticut Public Health Association, Harry Auerbach, 310 Cedar St., New Haven
Cuban Public Health Society, Dr. Raphael Calvo Fonseca, San Rafael 1170, Havana
Florida Public Health Association, Fred B. Ragland, P. O. Box 210, Jacksonville
Georgia Public Health Association, Mrs. Mayola S. Center, Rm. 332, State Office Bldg., Atlanta
Idaho Public Health Association, Frances M. Goodwin, P. O. Box 714, Boise
Illinois Public Health Association, Ben D. Kiningham, Jr., 730 South Sixth St., Springfield
Iowa Public Health Association, L. E. Chancellor, State Department of Health, Des Moines
Kansas Public Health Association, Evelyn Ford, State Board of Health, Topeka
Massachusetts Public Health Association, Mrs. Elizabeth K. Caso, 695 Huntington Ave., Boston
Michigan Public Health Association, La Rue Miller, State Department of Health, Lansing
Minnesota Public Health Conference, D. S. Fleming, M.D., State Dept. of Health, University Campus, Minneapolis
Missouri Public Health Association, P. F. Rector, State Division of Health, Jefferson City
New Mexico Public Health Association, Mary M. Gilliland, Box 711, Santa Fe
New York State Public Health Association, Mary Karpiak, City Health Dept., Rochester
North Carolina Public Health Association, Mrs. Louise Y. Workman, City Health Dept., Charlotte
North Dakota Public Health Association, Lloyd D. Volker, 2912 University Ave., Grand Forks
Northern California Public Health Association, Christine MacKenzie, Rm. 751, 760 Market St., San Francisco
Ohio Public Health Association, Mrs. Betty Richards, Rm. 313, City Hall, Columbus
Oklahoma Public Health Association, Marjorie Butler, State Dept. of Health, Oklahoma City
Pennsylvania Public Health Association, Mary Arnold, City Health Dept., Pittsburgh
Public Health Association of New York City, ———
Puerto Rico Public Health Association, Virginia T. Belaval, Dept. of Education, San Juan
South Carolina Public Health Association, Carrie B. Du Priest, State Board of Health, Columbia
South Dakota Public Health Association, ———
Southern California Public Health Association, Gerald A. Heidbreder, M.D., 808 N. Spring St., Los Angeles
Tennessee Public Health Association, Monroe F. Brown, M.D., State Department of Health, 420 Sixth Ave., N. Nashville
Texas Public Health Association, Earle W. Sudderth, Dallas Co., Health Dept., Dallas
Utah Public Health Association, William R. Manning, State Capitol Bldg., Salt Lake City
Washington State Public Health Association, Elizabeth Massier, 2324 Pacific Ave., Tacoma
West Virginia Public Health Association, Annette King, State Department of Health, Charleston
Southern Branch, A.P.H.A., Andrew Hedmeg, M.D., State Dept. of Health, Civil Courts Bldg., New Orleans, La.
Western Branch, A.P.H.A., Harold F. Gray, Univ. of California, Berkeley, Calif.

INDEX TO ADVERTISERS

	Page
American Public Health Association:	
Affiliated Societies	VIII
Book Service	XXIX
Governing Council	XII, XIII
Membership Application Blank	XXXIII
Sustaining Members	XXVIII
American Aerovap, Inc.	II
American Bottlers of Carbonated Beverages	XVI, XVII
American Meat Institute	XIV
Bausch & Lomb Optical Company	XXIV
Certified Blood Donor Service	XXXIV
Chesebrough Mfg. Co., Cons'd.	XXXVI
Chicago Dietetic Supply House, Inc.	XXXV
Corning Glass Works	XVIII
Crown Cork & Seal Company	XIX
Cutter Laboratories	V
Difco Laboratories	Back Cover
Directory of Exhibits	XXX, XXXI
Directory of Health Service	XXXV
Barker & Wheeler	
Black & Veatch	
Dickman Laboratories	
Directory of Health Service	XXXV
Professional Examination Service, A.P.H.A.	
Emerson Venable	
Diversey Corporation	XXVII
Dixie Cups	XXVII
Hoffmann-La Roche, Inc.	XXII
International Equipment Company	XXI
Lily-Tulip Cup Corporation	XV
Mill Creek Products Co., Inc.	XXXV
Orkin Institute of Industrial Sanitation	IX
Oval Wood Dish Corporation	XXV
Parke, Davis & Company	III
Pennsylvania Salt Manufacturing Company	XXIII
Pfizer, Chas., & Co., Inc.	XXXVII
Powers X-Ray Products, Inc.	XXXII
Ralston Purina Company	XXXIII
Reynolds, R. J., Tobacco Company	VII
Sealright Co., Inc.	XX
Upjohn Company	X, XI
Vitamin Food Co., Inc.	XXVII
Wallace & Tiernan	XXVI, XXXII

Objective Inspection

MAY BE THE MISSING-LINK IN YOUR SANITATION PROGRAM



YOU may be too close to plant operations to keep the over-all plan and the details in proper focus. You may not be aware of what others in your industry (or other industries) are doing. You may not be informed as to the changing demands of regulatory bodies.

WE offer a trained staff in bacteriology, chemistry, entomology and sanitary engineering to inspect your plant objectively . . . thus bringing you a new viewpoint in control. We will analyze existing conditions in terms of regulations and sound economics.

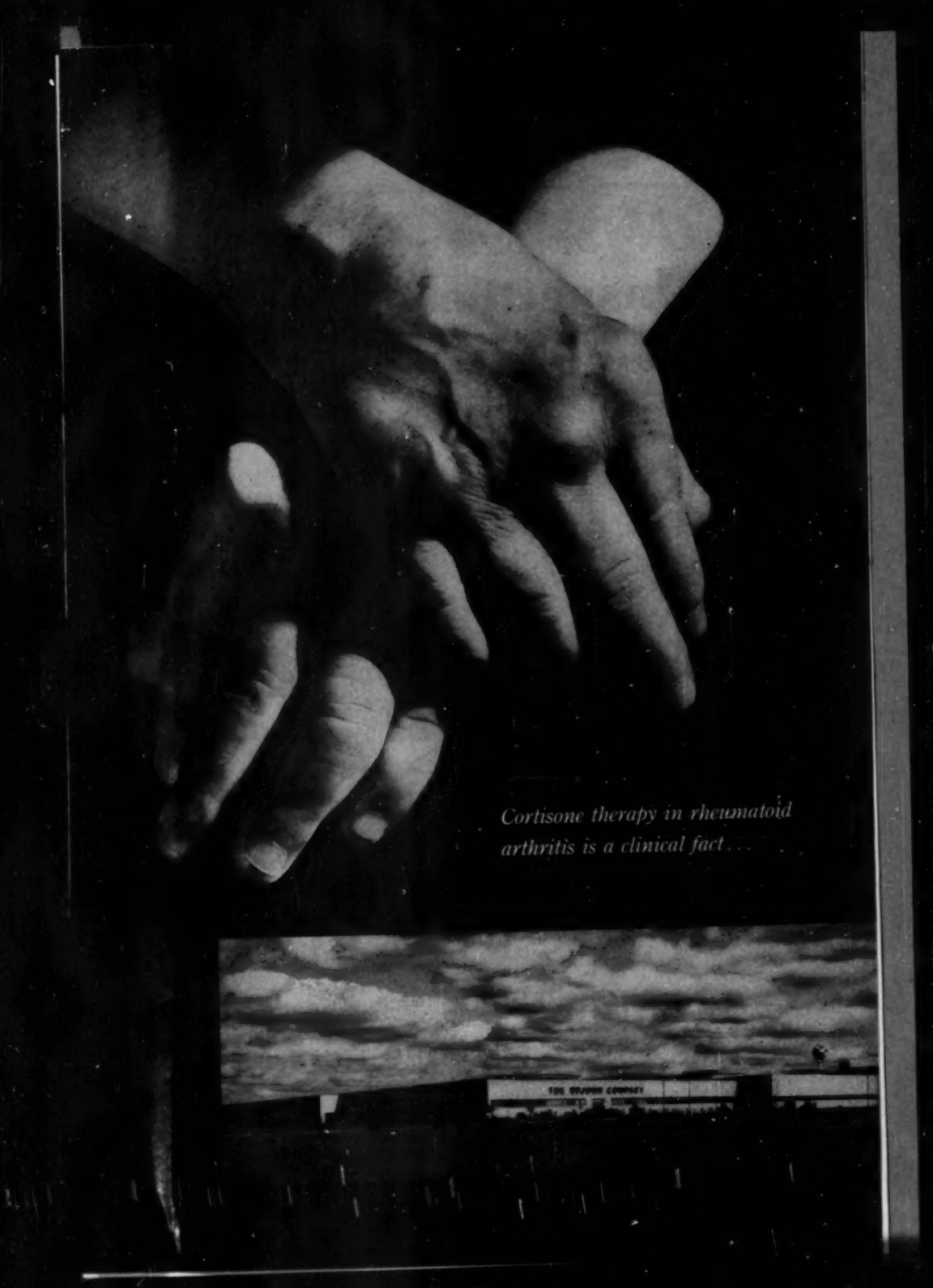
Write Us To Learn How Our Service Will Benefit You.

ORKIN

Advancing Sanitation Across the Nation

INSTITUTE OF INDUSTRIAL SANITATION

713 West Peachtree Street Atlanta, Georgia


Cortisone therapy in rheumatoid arthritis is a clinical fact . . .

A statement from The Upjohn Company

We are now producing cortisone from abundantly available materials, such as yeast, Mexican yam and soybeans.

Years of work in the adrenal cortex field by our research people led to this discovery. The simple methods they have developed will also enable us to make other cortical steroids from these same materials.

This new process should permit lower prices as our production increases.

Upjohn Cortisone Acetate Tablets, 25 mg., are available in bottles of 20 tablets.

Upjohn

AMERICAN PUBLIC HEALTH ASSOCIATION, Inc.
GOVERNING COUNCIL

OFFICERS 1951–1952

President, Gaylord W. Anderson, M.D., Minneapolis, Minn.
President-Elect, Wilton L. Halverson, M.D., San Francisco, Calif.
Vice-President, Walter L. Bierring, M.D., Des Moines, Iowa
Vice-President, Mac H. McCrady, Montreal, Quebec
Vice-President, Hernan Romero, M.D., Santiago, Chile
Treasurer, Charles Glen King, Ph.D., New York, N. Y.
Chairman of Executive Board, Hugh R. Leavell, M.D.. Boston, Mass.
Executive Secretary, Reginald M. Atwater, M.D., New York, N. Y.

EXECUTIVE BOARD

Chairman, Hugh R. Leavell, M.D., Boston, Mass. (1952)
Gaylord W. Anderson, M.D., Minneapolis, Minn. (President)
Ruth Freeman, Ed.D., Baltimore, Md. (1953)
Wilton L. Halverson, M.D., San Francisco, Calif. (President-Elect)
Herman E. Hilleboe, M.D.. Albany, N. Y. (1954)
Charles Glen King, Ph.D., New York, N. Y. (Treasurer)
Roy J. Morton, M.S., Oak Ridge, Tenn. (1954)
Joseph W. Mountin, M.D., Washington, D. C. (1952)
George M. Uhl, M.D., Los Angeles, Calif. (1953)

ELECTIVE COUNCILORS

Terms Expiring 1952

Leroy E. Burney, M.D., Indianapolis, Ind.
Dean A. Clark, M.D., Boston, Mass.
Ruth Freeman, Ed.D., Baltimore, Md.
John W. Knutson, D.D.S., Bethesda, Md.
Alexander D. Langmuir, M.D., Atlanta, Ga.
John T. Marshall, Ottawa, Ontario
George T. Palmer, Dr.P.H., San Francisco, Calif.
Leonard A. Scheele, M.D., Washington, D. C.
Walter D. Tiedeman, M.C.E., Ann Arbor, Mich.
George M. Wheatley, M.D., New York, N. Y.

Terms Expiring 1953

Jessie M. Bierman, M.D., Berkeley, Calif.
Katharine F. Lenroot, Hartsdale, N. Y.
Frederick D. Mott, M.D., Washington, D. C.
Ralph S. Muckenfuss, M.D., New York, N. Y.
Hugo Muench, Jr., M.D., Boston, Mass.
J. T. Phair, M.B., Toronto, Ontario
W. G. Smillie, M.D., New York, N. Y.
Ernest L. Stebbins. M.D., Baltimore, Md.
Margaret S. Taylor, R.N., Minneapolis, Minn.
Felix J. Underwood, M.D., Jackson, Miss.

Terms Expiring 1954

Margaret G. Arnstein, R.N., Washington, D. C.
George Baehr, M.D., New York, N. Y.
Leona Baumgartner, M.D., New York, N. Y.
Robert H. Hutcheson, M.D., Nashville, Tenn.
Edward G. McGavran, M.D., Chapel Hill, N. C.
Dorothy B. Nyswander, Ph.D., Berkeley, Calif.
William H. Sebrell, Jr., M.D., Bethesda, Md.
James S. Simmons, M.D., Boston, Mass.
Nathan Sinai, Dr.P.H., Ann Arbor, Mich.
Franklin H. Top, M.D., Minneapolis, Minn.

SECTION OFFICERS

Health Officers

Chm., Frank M. Hall, M.D., Gainesville, Fla.
Vice-Chm., Archibald S. Dean, M.D., Buffalo, N. Y.
Secy., John D. Porterfield, M.D., Columbus, Ohio
Section Council:
Richard F. Boyd, M.D., Boston, Mass.
Harold D. Chope, M.D., Redwood City, Calif.
C. Howe Eller, M.D., Louisvile, Ky.
Stanford F. Farnsworth, M.D., Washington, D. C.
Joseph G. Molner, M.D., Detroit, Mich.

Laboratory

Chm., John T. Tripp, Ph.D.. Bethesda, Md.
Vice-Chm., Albert H. Harris, 2nd, M.D., Albany, N. Y.
Secy., Col. Dwight M. Kuhns, M.C., Washington, D. C.

Statistics

Chm., Oswald K. Sagen, Ph.D., Springfield, Ill.
Vice-Chm., Elizabeth Parkhurst, S.M., Albany, N. Y.
Secy., Carl L. Erhardt, New York, N. Y.

AMERICAN PUBLIC HEALTH ASSOCIATION, Inc.
GOVERNING COUNCIL—Cont.

Engineering

Chm., Ernest G. Eggert, Macon, Ga.
Vice-Chm., Justin M. Andrews, Sc.D., Atlanta, Ga.
Secy., Dwight F. Metzler, C.E., Lawrence, Kans.

Industrial Hygiene

Chm., Frank A. Patty, Detroit, Mich.
Vice-Chm., Herbert K. Abrams, M.D., Berkeley, Calif.
Secy., Clyde M. Berry, Ph.D., Linden, N. J.

Food and Nutrition

Chm., Alice H. Smith, M.S., Lansing, Mich.
Vice-Chm., Frederic W. Nordsiek, New York, N. Y.
Secy., Helen Stacey, M.A., Washington, D. C.

Maternal and Child Health

Chm., Goldie B. Corneliuson, M.D., Lansing, Mich.
Vice-Chm., Robert E. Jewett, M.D., Indianapolis, Ind.
Secy., Samuel M. Wishik, M.D., Pittsburgh, Pa.

Public Health Education

Chm., Vivian V. Drenckhahn, M.S., New York, N. Y.
Vice-Chm., Ruth E. Grout, Ph.D., Minneapolis, Minn.
Secy., Robert O. Yoho, M.A., Indianapolis, Ind.

Public Health Nursing

Chm., Margaret L. Shetland, R.N., Syracuse, N. Y.
Vice-Chm., Janet F. Walker, M.S., Los Angeles, Calif.
Secy., Dorothy Wilson, Ed.D., New Haven, Conn.

Epidemiology

Chm., Charles E. Smith, M.D., Berkeley, Calif.
Vice-Chm., Col. Tom F. Whayne, M.C., Washington, D. C.
Secy., Alexander G. Gilliam, M.D., Bethesda, Md.

School Health

Chm., Fred V. Hein, Ph.D., Chicago, Ill.
Vice-Chm., Elizabeth S. Avery, Ph.D., Washington, D. C.
Secy., Charles C. Wilson, M.D., New Haven, Conn.

Dental Health

Chm., Thomas W. Clune, D.M.D., Cranston, R. I.
Vice-Chm., William H. Rumbel, D.D.S., Richmond, Va.
Secy., Thomas L. Hagan, D.D.S., Washington, D. C.

Medical Care

Chm., Paul B. Cornely, M.D., Washington, D. C.
Vice-Chm., Edwin F. Daily, M.D., New York, N. Y.
Secy., Milton Terris, M.D., Buffalo, N. Y.

Representatives of Affiliated Societies and Branches

Lad R. Mezera, M.D., Arizona
J. Robert Cameron, M.P.H., Colorado
Alfred L. Burgdorf, M.D., Connecticut
Guillermo Lage, M.D., Cuba
Wilson T. Sowder, M.D., Florida
James A. Thrash, M.D., Georgia
Lawrence J. Peterson, M.S.P.H., Idaho
Baxter K. Richardson, Illinois
Walter L. Bierring, M.D., Iowa
Lewis W. Andrews, Kansas
Vlado A. Getting, M.D., Massachusetts
————————, Michigan
Robert N. Barr, M.D., Minnesota
J. Earl Smith, M.D., Missouri
Billy Tober, New Mexico
John L. Rice, M.D., New York City
Albert D. Kaiser, M.D., New York State
J. W. R. Norton, M.D., North Carolina
Melvin E. Koons, North Dakota
Margaret Beattie, Northern California
E. R. Shaffer, M.D., Ohio
Nathaniel H. Cooper, M.D., Oklahoma
Eli Eichelberger, M.D., Pennsylvania
Nelson Biaggi, Puerto Rico
Ben F. Wyman, M.D., South Carolina
Charles L. Senn, Southern California
————————, South Dakota
Paul M. Golley, M.D., Tennessee
Earle W. Sudderth, Texas
W. Whitney Smith, Ph.D., Utah
John L. Jones, M.D., Washington State
Laurene C. Fisher, R.N., West Virginia
Lloyd M. Graves, M.D., Southern Branch
Arthur L. Ringle, M.D., Western Branch

MEAT... and the Cholesterol Content of the Diet

An essential constituent of human tissue, contributing to the normal functioning of all cells, cholesterol has been widely discussed as a factor in the etiology of atherosclerosis. Yet this lipid is required in many metabolic processes, and, furthermore, evidence is lacking that withholding cholesterol from the dietary is effective in preventing atherosclerosis.

In a recent plea for a return to the basic fundamentals of nutrition in the prophylaxis of atherosclerosis, it was emphasized that to eliminate cholesterol from the diet would mean to eliminate such animal foods as meat, milk, eggs, etc.* However, nutritionists are unanimous in asserting that these protective foods contain basic essential nutrients required for good nutrition and that to deny them would be "equivalent to the negation of practically all that nutrition science has taught us in the past."

According to these authors,* elimination of animal foods from the diet to prevent the development of atherosclerosis is unjustified on the basis of present day knowledge. They state that "there certainly is no evidence that meatless, milkless, and eggless diets should be recommended as desirable to the general public."

Meat, America's favorite protein food, always has been and continues to be an important dietary source of biologically complete protein, B vitamins, and iron. Few indeed are the conditions in which its use must be interdicted.

---

*Hegsted, D. M.; Mann, G. V., and Stare, F. J.: Comments on Cholesterol, Editorial, Postgrad. Med. *11*:454 (May) 1952.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago... Members Throughout the United States

So have customers! Do food operators in your area know that most people today *prefer** to be served in paper? The more this fact is known, the better cooperation you'll get in ordinance enforcement.

Paper service is good for business in many other ways. Take Lily** Cups and Containers. Besides their handsome good looks they have practical saving ways, cutting costs of hot water, detergents, sanitizing, labor and dishwashing. Service is better, quicker, even when help is hard to get.

Tell the sanitary paper service story wherever food and drink are served. It makes sense, and it pays.

**In a recent impartial survey in nine cities, Fact Finders Associates reports that 70.2% of those expressing an opinion said they preferred to be served in paper!*

***T.M. Reg. U.S. Pat. Off.*

Lily® Cups

LILY-TULIP CUP CORPORATION
122 East 42nd Street, New York 17, New York
Chicago • Kansas City • Los Angeles • San Francisco • Seattle • Toronto, Canada

Dental Caries..

Dental caries is a destructive disease involving bacterial attack upon the structure of the tooth—that is, decay.

Erosion is not decay. It is described as a loss of calcium by dissolution or wearing away of the tooth in a manner similar to that resulting from the prolonged abrasion of hard bristles or coarse foods. Erosion of dental enamel has not been shown to be conducive to tooth decay.[1, 2]

Experimental studies have shown that when *animals* are fed acidulated liquids, including fruit juices, in abnormally large quantities, their teeth may be eroded.[3, 4] On the basis of these observations the theory has been proposed that drinking of acidulated liquids may cause decalcification of teeth in the *human* mouth. There have been no experimental studies on erosion of the *live human tooth* to support this assumption.

The results obtained on *animals'* teeth do not necessarily apply to *human* teeth. Possible structural and chemical differences between *animal* and *human* teeth, differences in the manner of drinking by *animals* and *man,* the protective mucin coating on the *human* tooth, and the washing and buffering capacity of the *human* saliva—all these must be taken into account. They are vitally important distinguishing factors.

The extent and duration of oral acidity following the ingestion of a variety of acid as well as non-acid foods have been recently investigated.[5] Among the substances studied were fruit juices and bottled carbonated cola beverage.

As shown in Table I, the highest level of acidity of the saliva at five minutes after ingestion was reached with the commonly used fruit juices—orange juice, tomato juice, and grape juice; but for none of these did p^H of the saliva reach the "erosive level" of p^H 4.5 as postulated by McClelland[6] and Pincus,[7] or of p^H 3.5 mentioned by McCay

AMERICAN BOTTLERS OF CARBONATED BEVERAGES

THE NATIONAL ASSOCIATION OF THE BOTTLED SOFT DRINK INDUSTRY

American Bottlers of Carbonated Beverages

WASHINGTON 6, D. C.

..What Is The Truth About Erosion?

and Will[8] in the Journal of Nutrition.

And at no time after ingestion of the acidulated carbonated beverage did p^H of the subjects' saliva reach even the p^H 5.0 which the Michigan Workshop on dental caries cited as likely to be sufficient to decalcify the inorganic structure of the tooth.[9]

These data show that a decalcifying concentration of acid does not persist in the saliva of *humans* after drinking of acidulated beverages.

Bottled soft drinks have only a nominal sugar content (av. 10 per cent). Their 100 calories are an acceptable supplement to the basic dietary recommendations of the Food and Nutrition Board of the National Research Council. Their taste appeal encourages adequate liquid intake, while as fluids they pass quickly through the mouth with minimal retention. And they provide that enjoyable refreshment and energy for a quick pick-up, which is their primary purpose.

TABLE I

Acidity of Saliva: Before and After Drinking.

p^H*	Carbonated Soft Drink	Orange Juice	Grape Juice	Tomato Juice
p^H before drink	6.45	6.45	6.95	6.45
p^H 5 min. after drink	5.17	4.99	4.92	4.94
p^H 10 min. after drink	6.02	5.98	5.96	5.95

*p^H is the symbol used in expressing acidity or alkalinity of all substances. p^H 7 is the neutral point. Above 7, alkalinity increases; below that figure, acidity increases.

TABLE II

Acid Concentration in Fruit Juices and Bottled Soft Drinks.

Fruit Juices (a)				Soft Drinks (b)	
Type	Acid %	Type	Acid %	Flavors	Acid %
Apple	0.52	Lime	6.90	Grape	0.10
Blackberry	1.13	Loganberry	1.89	Lemon	0.13
Blueberry	0.18	Orange	1.80	Orange	0.06
Currant (red)	2.80	Pineapple	1.80	Strawberry	0.10
Grapefruit	1.60	Raspberry (red)	1.40	Colas	0.06
Grape	0.80	Strawberry	1.01	Ginger Ale	0.12
Lemon	5.80	Tomato	0.40	Cream Soda	0.02

(a) The Chemistry and Technology of Food and Food Products, edited by Morris B. Jacobs, Interscience Publishers, Inc., N. Y., pages 583. Values taken from U.S. Dept. of Agriculture, Circular 548 (June, 1940).
(b) Food Industries, October 1940, Vol. 21, No. 10, page 75.

REFERENCES

1. Stephan, R. M.: Some Local Factors in the Development of Cavities. J. Dent. Res. 27:96, (Feb.) 1948.
2. Wallace, J. S.: Newer Knowledge of Hygiene and Diet. Dent. Items. Int. 69:628, 1947.
3. Restarski, J. S., Gortner, R. A., and McCay, C. M.: Effect of Acid Beverages Containing Fluorides Upon the Teeth of Rats and Puppies. J. Am. Dent. Assn., 32:668, (June) 1945.
4. Wynn, W. and Haldi, J.: The Erosive Action of Various Fruit Juices on the Lower Molar Teeth of the Albino Rat. J. Nutrition, 35:489, (April) 1948.
5. Haggard, H. W. and Greenberg, L. A.: Acidity of Saliva After Ingestion of Carbohydrate and Acid-Containing Substances. J. Dent. Res. 30:126, 1951.
6. McClelland, J. R.: The Decalcification of Human Tooth Enamel. Dent. Cosmos. 62:127 (1926).
7. Pincus, P.: Production of Dental Caries. Brit. Med. J. 2:358 (Aug.) 1949.
8. McCay, C. M. and Will, L.: Erosion of Molar Teeth by Acid Beverages. Journal of Nutrition. 39:313, (Nov.) 1949.
9. Michigan Workshop: Reports of Evaluating Committees. Dental Caries, Easlick, K. A. (Ed.), P. 202, St. Louis, 1948, C. V. Mosby Co.

Announcing...

CORNING MICRO COVER GLASSES

Now, for the first time, you can get micro cover glasses that are water-white crystal in color and that offer a degree of flatness that cannot be matched by any other cover glass on the market.

Meeting government specifications in every respect and of finest optical quality, these cover glasses are a product of Corning's continuing research in glass. Manufactured to exacting specifications, they are uniform in thickness and quality. Successful production of this cover glass by Corning means that laboratory technicians in this country will now have a completely independent domestic supply of micro covers.

Available in two standard thickness ranges, No. 1 (.13 to .17 mm.) and No. 2 (.17 to .25 mm.), CORNING Micro Cover Glasses are cut and marketed by Alfred Bicknell Associates, Cambridge, Mass. and J. Melvin Freed, Inc., Perkasie, Pa. Your laboratory supply dealer carries complete stocks. Contact him today.

PYREX

CORNING GLASS WORKS, CORNING, N. Y.

Corning means research in Glass

VISIT THE NEW CORNING GLASS CENTER

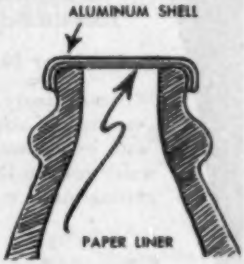
The DACRO P-38 Cap

is easy to remove and makes a perfect re-seal time after time

Just a slight upward pressure with the thumbs, and the Dacro Aluminum Cap comes off. It does not crumple up when removed from the bottle, but holds its shape so that it can be snapped back on, over and over again.

Dacro seals not merely covers

Dacro P-38 is different from all other milk caps. The hard aluminum, backed by a strong paper liner, makes an air-tight seal. There is no chance of the milk in the bottle being contaminated in any way, or its flavor being affected by foreign odors, particularly when kept in the refrigerator.

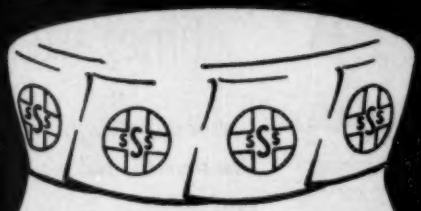


CROWN CORK & SEAL COMPANY

Dacro Division • Baltimore 3, Md.

NOW SEALON HOOD PROTECTION

Available to ALL DAIRIES



Sealright Co., Inc., now provides a one-head hooding machine especially designed for small dairy use. This smaller model of the famous Sealon Hood applying machine used by so many of the country's larger dairies, now makes it possible for all dairies to protect their milk with Sealright's sterilized tamper-proof closure which completely seals the entire pouring surface.

Another New SEALRIGHT Sanitation Feature

The ordinary water spray in dairies is of low pressure variety and attempts to wash off excess milk on bottle top with excess water. The new Sealright, high-pressure, low-water volume Dri-Spray cleans and dries bottle tops without getting into a messy dairy operation.

Sealright

Sealright Co., Inc.
Fulton, N. Y.—Kansas City, Kansas
Sealright Pacific, Ltd.
Los Angeles, Calif.
Canadian Sealright Co., Ltd.
Peterborough, Ont., Can.

For dairies not yet equipped with Sealon machines these Coverite Caps offer the best protection in closures of this type. Their precision fit, double-thick construction, wax impregnated stock all serve to keep out dirt, dust or moisture.

New 12-Place Angle Head
for International Clinical Model Centrifuge

Now you can swing twelve 15 ml. Centrifuge tubes *or* twelve blood serum tubes 16 mm. x 100 mm. or smaller in your International Clinical Model. The new angle style head, Catalog No. 809, fits any International Clinical Model now in service and has 12 drilled holes to accommodate twelve 15 ml. glass tubes in Metal Shields No. 302 or 12 blood serum tubes in Metal Shields No. 303. Maximum speed of the No. 809 head on alternating current 3770 r.p.m., 1790 x g. Prices: No. 809 Head — $33.90; No. 302 or No. 303 Shields — each $1.05. Obtainable now from your Laboratory Apparatus Supply Dealer.

Advantages offered only by the International Clinical Model

Interchangeable accessories in wide variety — 32 different accessory combination possibilities.

Basket style heads for continuous filtrations — interchangeable with conventional tube-carrying heads.

Higher speeds, for example, 4-place 15 ml. angle head 4300 r.p.m., 2650 x g. on alternating current.

Guaranteed by over fifty years of specialization in Centrifuge manufacture.

INTERNATIONAL EQUIPMENT COMPANY

1284 SOLDIERS FIELD ROAD, BOSTON 35, MASS

Send for Bulletin CHC-1952

more effective against

tinea capitis

"More effective in ringworm of the scalp than any other topical agent."[1]

tinea pedis

In "athlete's foot" a combined cured and improved rate of 95% has been obtained.[1]

Also indicated in

tinea corporis
tinea cruris
tinea versicolor
tinea of the nails

"broad antifungal spectrum ...good cutaneous tolerance."[1]

New!

Asterol® *dihydrochloride*

5% tincture . . . ointment . . . powder . . . sprayed, applied with cotton or dusted on

'Roche'

1. Stettaler, C.; Fishman, I. M., and Laurens, S.: *Transactions New York Acad. Sc.*, *13*:51, Nov., 1950.

HOFFMANN-LA ROCHE INC • ROCHE PARK • NUTLEY 10 • NEW JERSEY

ASTEROL DIHYDROCHLORIDE 'ROCHE'—BRAND OF BIANTHAZOLE DIHYDROCHLORIDE
[2-DIMETHYLAMINO-6-(β-DIETHYLAMINO ETHOXY)-BENZOTHIAZOLE DIHYDROCHLORIDE]

an experienced team at your service

S. H. CROUNSE, Sales Mgr.

W. A. HADFIELD, Tech. Advisor

J. A. KEENAN

E. E. CLARK

H. N. NUPSON

E. O. LUNDGREN

H. M. EWELL

S. B. HEAFNER

THESE 8 MEN TOTAL OVER 200 YEARS' SANITIZING KNOW-HOW IN B-K'S 40TH YEAR

Built into the quality of B-K Powder—and the knowledge, service and integrity behind it—is the prestige of 40 years of experience. B-K was the first proprietary hypochlorite bactericide and sanitizer distributed to the dairy industry. The same men who introduced chemical bacteria control to the dairy industry are behind this product today.

We are glad to honor these men whose aggregate service now totals over 200 years. And we are pleased to inform the dairy industry that they are still rendering the fine service and scientific research to plants and farmers that has been their practice in the 40 years since 1912.

Our work has been—and continues to be—making products for and rendering services to all levels of the dairy industry. We are grateful to the members of the industry for their warm friendship and hearty support of the idea which started in such a small way many years ago. B-K Dept., Pennsylvania Salt Manufacturing Company, Philadelphia 7, Pa.

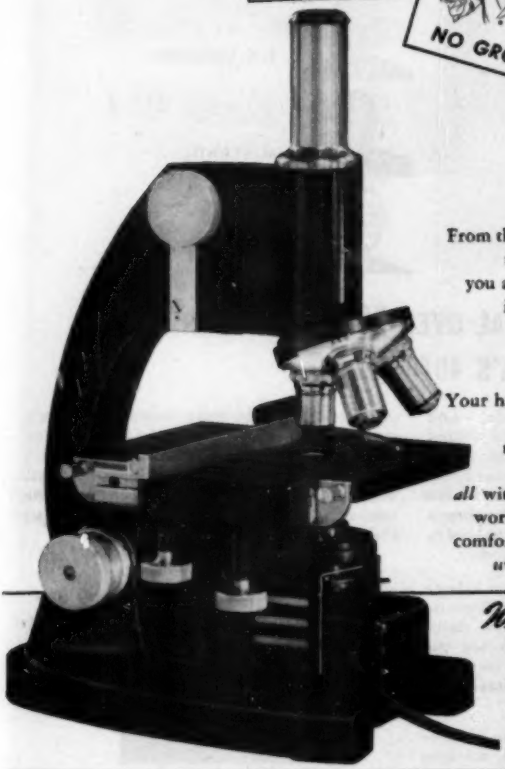
Pennsalt Chemicals

B-K

EASY DOES IT!

with BAUSCH & LOMB Dynoptic

LABORATORY MICROSCOPES



From the moment you position your slide . . . to your final look at the specimen . . . you are enjoying a whole new experience in microscopy. You've never felt such smooth rolling focusing action as Dynoptic ball bearing motion. You've never known such comfort. Your hand is *completely at rest* on the table for operation of fine adjustment, mechanical stage, substage condenser controls, and illuminator switch . . . *all* within effortless reach. You—and your work—will benefit from these *exclusive* comfort and convenience advantages of the *world's finest laboratory microscopes.*

Write for free demonstration and literature. See for yourself how Bausch & Lomb *Dynoptic* Microscopes out-perform any laboratory microscope ever made. Bausch & Lomb Optical Co., 78207 St. Paul St., Rochester 2, New York.

B&L

Many Food Vendors Couldn't Operate without These Sanitary Single-Service Eating Utensils

People want food, beverages, refreshments to be available wherever they may be and at all times. People are eating and drinking at drive-ins, roadside stands, fountains, lunch counters, ice cream bars, coffee urns, sandwich shops, and other such places situated in all kinds of environments everywhere.

The nature and location of many such establishments prohibit the use of proper sanitizing equipment. In many instances, public health authority is compelled to close such places to protect the public.

These food vending enterprises become both sanitary and profitable when they serve their specialties with OWD Ritespoon and OWD Ritefork. No other single-service eating utensils can be served with such a wide variety of foods. None other has an equal measure of public acceptance.

Let us send you samples.

The only single service spoon made of selected northern hardwood with the true shape and full bowl capacity of metal ware. Strong, rigid, tasteless, odorless, smooth, perfect in shape and finish. Four sizes meeting every food service need, and OWD Ritefork. In bulk cartons and cellophane over-wrapped 10 cent packages.

OWD Ritespoon

Made only by OVAL WOOD DISH CORPORATION / TUPPER LAKE, N.Y. - Graybar Bldg., New York City 17 - 31 E. Congress St., Chicago 5
THE OVAL WOOD DISH CO. OF CANADA LTD., Industrial Center No. 5, Quebec, P. Q.

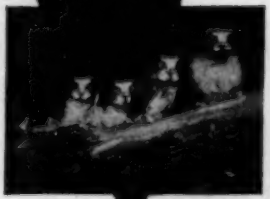
the part you don't see is important...

IN W&T CHLORINATORS, TOO!

When you look at a single W&T Chlorinator you can't see the basic research, the complete line of equipment, and the service that are behind it.

For instance, the engineer, the plant operator and the taxpayer all benefit from W&T's complete line of equipment. In the selection of equipment for a water supply — large or small — the engineer can always find a W&T Chlorinator to fit all requirements. The plant operator knows that this complete line can provide a W&T Chlorinator designed to help him provide safe water with his particular plant layout. The taxpayer is assured that money spent for W&T Equipment fitted to the present as well as the future needs of his community will provide long range economy.

These advantages of W&T's wide selection of equipment are probably one reason so many people use W&T Chlorinators.



WALLACE & TIERNAN COMPANY, INC.

CHLORINE AND CHEMICAL CONTROL EQUIPMENT

NEWARK 1, NEW JERSEY • REPRESENTED IN PRINCIPAL CITIES

S-70

American Journal of Public Health
and THE NATION'S HEALTH

Volume 42 July, 1952 Number 7

Community Planning for Rehabilitation

WALTER WENKERT, M.P.H.

Executive Secretary, Tuberculosis and Health Association of the New Haven Area, New Haven, Conn.

COMMUNITY planning for health is a difficult art, perhaps more praised than practised. Rehabilitation is often a neglected aspect of our planning even in areas where more traditional health concerns are receiving attention.

When we concern ourselves with the handicapped we can gain the productivity and full citizenship of some of our neighbors who now are dependents of the community. We also gain the opportunity to cross the artificial boundary lines of health, recreation, social work, group work that foreshorten the scope of much of our planning.

Our aim must be to help the handicapped individual attain the highest degree of social determination and social usefulness, or more simply, independence. The official definition says it in a more academic fashion: "Rehabilitation is the restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which they are capable." [1] Our methods must then involve the disciplines that can contribute to that end. It will not be of any help to use a broad concept and a narrow application.

The rehabilitation process requires diagnosis and therapy, a diagnosis and therapy involving as many disciplines as will contribute to the understanding of the total individual. The problem is as complex as the person and the community in which he lives. The problem, the rehabilitation diagnosis in other words, is not merely the physical disability or medical diagnosis. It involves the person's attitude toward his disability, his emotional pattern, his abilities and aptitudes, his family and community ties. It involves the community's attitude toward him. Does it accept or reject him? Is it afraid of the tuberculous or the epileptic? Does it consider the label of "alcoholic" as an end-diagnosis which removes the individual from consideration as a human being and places him in the realm of the statistical?

The complexity of the process and the skills involved has been expressed best by the National Council on Rehabilitation:

> The process of rehabilitation involves three major fields—medical field, the social adjustment field, and the vocational adjustment field.
>
> 1. The medical field comprises all those services which are directed toward the restoration of the disabled individual to maximum physical competence and mental health—(by) the physician, the nurse, the physical therapist, the occupational therapist, the physical education worker, and the dentist.
>
> 2. The social adjustment field comprises all those services which are directed toward help-

ing the disabled individual to make a satisfactory social and emotional adjustment to his environment and in his relationships with others—(by) the medical social worker, the psychologist, the special teacher, and the guidance counselor.

3. The vocational adjustment field comprises all those services which are directed toward helping the disabled individual select, prepare for, and establish himself in the occupation which offers maximum scope for his abilities and maximum likelihood of adequate satisfactions—(by) the vocational counselor, the psychologist, the prevocational teacher, the sheltered workshop supervisor, the vocational teacher, the placement agent, and the follow-up field agent.[2]

This cataloguing of services by no means supposes the use of all of them for any one person. It does assume that one agency or one person will be in a position to "stay with" the handicapped individual throughout the process and call on the diagnostic and therapeutic skills that seem to be required.[3] Therefore, unless that person or agency is operating in a context that permits concern for more than one "aspect" of the patient, the diagnosis and the therapy may be limited and abortive. In such a situation the problem may be considered as one of financial assistance to the department of public welfare, a matter of a disease or disability entity to the physician, or one of marginal labor to the placement worker.

The catholicity of this approach does not simplify the problem of community planning for rehabilitation. When we are able to measure a community problem in a statistical way we are inclined to tackle the most striking concerns first. We cannot, however, easily develop a "rehabilitation index." The number of those having chronic illness or physical impairments is not the number who are handicapped and can benefit from rehabilitation. We all know persons who have physical handicaps which they accept and overcome in a manner which causes envy among their unimpaired compatriots; others having similar physical impairments, set in very different patterns of age, education, financial, and emotional factors, may be very seriously handicapped. The individual diagnosis of factors causing a handicap is the only consideration that is fully significant. Since this diagnosis requires both a rehabilitation point of view and the availability of various services, the best available figures on the size of a community rehabilitation need is likely to be an inference. Such inferential figures have been widely quoted,[4-6] and, undoubtedly, help to impress us with the scope of the task we face.

An example of disability tabulation is that made in New Haven where a house-to-house canvass of the population resulted in estimates that 12 per cent of the population of New Haven had a chronic illness, 3 per cent were partially disabled, and 0.6 per cent were totally disabled.[7] In reply to a questionnaire, 29 agencies reported that they were serving 5,380 persons with disabilities during the calendar month of May, 1948;[8] this was roughly 3 per cent of the population. The National Health Survey of 1935–1936 reported that 4½ per cent of persons in urban communities were disabled on the day of the canvass and 1 per cent of workers aged 15 to 64 were reported to be unemployable by reason of their disability.[9]

We get closer to the heart of the matter when we shift our attention from statistics to the philosophy of service of the various groups who are in touch with the disabled. Our span of interest must be broad:

Hospitals, Clinics, Medical Schools

1. Are physicians being taught basic psychology which will enable them to understand the patient's motivation in responding to the threat of long-term illness and disability?

2. Are physicians being taught how to initiate physical medical, psychosocial, and vocational services?

3. Is there a centralized responsibility for screening patients with chronic or disabling illness in terms of their ability to profit not only from physical restoration, but also in

terms of their probable ability to function as an adult?

The Bureau of Vocational Rehabilitation

1. Are its basic counseling, selective placement services and its provision for training and physical restoration services adequately financed?

2. Are the Bureau's professional qualifications, recruitment policies, and personnel policies of such character as to attract and keep quality personnel?

3. Does it have auxiliary personnel, such as a medical consultant, a clinical psychologist, or medical social service assistance in maintaining quality casework and good working relationships with other agencies?

4. How does the state program compare with those of other states in such matters as the number of the handicapped served and types of services rendered?

The State Employment Service

1. Does it have counselors trained and assigned to job recruitment, counseling, and selective placement of the physically handicapped?

2. Is its staff trained and able to refer the handicapped to other agencies that can assist?

Family Service and Group Work Agencies

1. Do their staffs have some knowledge of the physical restoration technics of modern medicine, the aids of clinical psychology, and vocational counseling sufficient to call on these resources to assist the handicapped?

2. Does the agency have the basic cooperation of treatment centers, such as hospitals, clinics, physicians, and the Bureau of Vocational Rehabilitation to insure some referral and consultation in cases where family and personal adjustments may be part of the handicapping problem?

The Health Department (State and Local)

1. If it provides direct restoration and social services, such as physical therapy, occupational therapy, and social service in a crippled children's program, are these services linked with psychosocial and vocational services elsewhere in the community?

2. Is the nurse-patient contact in the public health nursing service such that patients turn to the nurse with problems? Is she equipped to orient the person or family on the type of professional help he may expect and to refer him to an appropriate agency? Is she in a position to judge whether her referral was a fruitful one?

The Schools (Elementary, Secondary, College)

1. Are the school medical and guidance programs discovering incipient and the obvious physical disabilities and emotional difficulties?

2. Is there a medical-nursing guidance follow-up on these problems through the use of school staffs and aids from other agencies?

Voluntary Agencies (Tuberculosis, Heart, Cancer, Polio, Crippled Children's Associations, Goodwill, Salvation Army, Others)

1. Do these maintain individually or in concert a workshop or center providing some rehabilitation services: occupational or physical therapy, prosthetic fitting and training, prevocational tryout, vocational counseling, vocational training, home-bound employment, or remunerative employment under noncompetitive conditions? [10, 11]

2. Do these agencies provide direct assistance of some type to the disabled through the use of a case committee or otherwise?

3. Do any employ or subsidize vocational counselors or social workers who serve the disabled?

Welfare Agencies

1. Does the local assistance program and the state program for aid to dependent children, the aged, the blind, and the permanently and totally disabled provide for adequate levels of basic assistance?

2. Does the medical program assist in the identification of remediable conditions?

3. Does the quality of the casework allow for preliminary identification of clients who with proper encouragement and assistance could be made vocationally independent?

Labor and Management

1. Does industry attempt to place individuals in jobs in terms of their physical abilities rather than disqualify them for physical disabilities?

2. Is there a management-labor attempt to replace folklore attitudes toward disease entities with understanding so that employees will accept their handicapped colleagues in terms of their performance?

These groups are by no means the only groups that are interested in the community's handicapped; nor are our lead questions exhaustive. They do in a general way, however, indicate the scope of our community organization effort.

Interested persons from these organizations and other groups gathered in a council of social agencies could begin to

overcome the difficulties inherent in the problem, the size of which is only vaguely defined and for which specific solutions are not clearly any one agency's responsibility. Provided such a group has inherent leadership, it can assist in long-range development of more adequate and economical services to the handicapped.

Some place major responsibility for leadership in community organization for rehabilitation on the hospital-medical school,[12] others on the Bureau of Vocational Rehabilitation.[13]

The Health Department might logically be asked to exhibit leadership even in an area of health concern where its current services are minor. A more realistic approach would seem to be one of accepting leadership where one finds it. This jibes with the nature of rehabilitation, a drawn-out process which uses many professional skills as it shifts emphasis from the original medical to the later vocational aspects.

If the study of our local handicapped has fewer tried guideposts than the traditional health concerns, it does not lack for methods of its own. At this point these methods seem to depend more heavily on judgment and less on objective evidence. The fact that rather limited rehabilitation services may be scattered in various places in the community makes them more difficult to assess than if they were centrally located and singly planned. Perhaps this is why the *Evaluation Schedule* of the American Public Health Association makes no effort to measure rehabilitation activities.

Some of the methods used by local committees in working out this concern have been:

1. *The Questionnaire*—This has been the basic tool in asking numerous agencies to state the size of the problem as they see it, the services they render, and unmet needs. Its value is limited sharply by the fact that the agency may understand the individual only in terms of a single professional point of view. The person filling out the questionnaire may not necessarily have immediate knowledge of or, sympathy with the rehabilitation process. The information gathered in this way may, however, be used to compile a simple manual of rehabilitation services.[14]

The study made by the Council of Social Agencies in Philadelphia was largely an exposition of the fundamentals of adequate rehabilitation services, an analysis of existing services as determined largely by a questionnaire, and recommendations in the major areas of current or proposed service.[15]

2. *The Case Conference*—When skills coming from several community sources are brought to the diagnosis and therapy of an individual, the committee learns through experience the practical limitations and value both of various professional skills and available community resources.[16]

3. *The Seminar or Conference*—This should probably avoid scholarly exposition of the technics of various professional groups. It can be an informal discussion of problems faced by the various agencies and could make good use of actual case problem material.[16]

4. *The Consultant*—To the extent that the local committee has been examining its local services, to that extent it will require the consultant's guidance on specific problems such as employment of the home-bound, the development of community information and referral service, and the like. If newly organized, the committee seems to rely more heavily on a comprehensive survey by the expert. Consultant service can be sought from the several sources: (a) the department of physical medicine and rehabilitation of a medical school and hospital, (b) through the local, state, and national offices of the Bureau of Vocational Rehabilitation; experts in the fields of physical restoration, vocational counseling, training and placement, and through the development of rehabilitation centers, (c) the specialized knowledges of the national health and welfare organizations.[17]

A local committee made up of interested lay and professional people will probably find the going quite slow. Even the most experienced workers gain in a realistic knowledge of their communities. From this understanding should come a gradual broadening in the scope of a community's ability to restore its handicapped to full citizenship.

REFERENCES

1. *The Processes of Rehabilitation.* New York: Committee on the Processes of Rehabilitation, National Council on Rehabilitation, 1947, 16 pp.
2. *Ibid.*, pp. 5, 6.
3. Hamilton, Kenneth W. *Counseling the Handicapped in the Rehabilitation Process.* New York: Ronald Press, 1950.
4. *Report on a Community Rehabilitation Service and Center.* New York: Committee on Physical Medicine, 1946.
5. *The Known Extent of Physical Disability in New York City.* Report Prepared for the Welfare Council of New York City (Apr. 1), 1947.
6. *Aid to the Physically Handicapped.* Report of the Subcommittee on Aid to the Physically Handicapped, Committee on Labor, House of Representatives, 79th Congress (Oct.), 1946.
7. *Chronic Disease and Long Term Illness in the New Haven Area.* Report of the Committee on the Care of the Chronically Ill. Council of Social Agencies, New Haven (Sept.), 1950, p. 6.
8. An Interim Report of the Rehabilitation Committee of the Council of Social Agencies, New Haven, fall of 1948.
9. Bulton, R. H., Collins, S. D., and Fitzgerald, J. S. *The National Health Survey—Some General Findings as to Disease, Accidents and Impairments in Urban Areas.* Reprint No. 2143, *Pub. Health Rep.* 55:444–470 (Mar. 15), 1940.
10. Furscott, Hazel E., *The Rehabilitation Center of San Francisco. J. Rehabilitation* (Mar.–Apr.), 1950, pp. 8–12.
11. Greve, Belle. *The Cleveland Rehabilitation Center. J. Rehabilitation* (July–Aug.), 1950, pp. 8–13.
12. Rusk, Howard A., and Taylor, Eugene, *Physical Medicine and Rehabilitation Survey of Greater Cleveland* (June), 1950. Ann Arbor, Mich: Edwards Brothers, 1950. 102 pp.
13. *Rehabilitation Centers.* Report of the Committee on Rehabilitation Centers, Office of Vocational Rehabilitation, Washington, D. C. (Oct. 23), 1950.
14. *Health Resources in Connecticut.* Report of the Governor's Commission on Health Resources (Dec.), 1950.
15. *A Community Plan for Rehabilitation.* Family and Health Divisions, Health and Welfare Council, Inc., Philadelphia (June), 1950.
16. Pohlmann, Kenneth E. Group Techniques in Rehabilitation Counseling. *J. Rehabilitation* (July–Aug.), 1951, pp. 7–9.
17. *The Summary Report on Rehabilitation Services to the Handicapped.* Committee of Citizens to Survey the Social and Health Needs and Services of Greater Boston, 261 Franklin St., Boston, Mass.

Bibliography of Hagerstown Studies

The U. S. Public Health Service, through its Division of Public Health Methods, has prepared an annotated bibliography of the Hagerstown Health Studies. The first of these was a comprehensive study of illness made in the fall of 1921. During the 30 years since that time, Hagerstown and Washington County "have served as a community research laboratory for the investigation of public health problems." Data derived from the Hagerstown Studies have been widely used for planning other studies, for comparing the findings, and for teaching in the schools of public health. The bibliography, in the words of its foreword, "is being issued to provide a comprehensive guide to those who may wish to start similar studies in other communities. It should also be of value in furnishing sources for comparing the findings of current investigations with those obtained over the years in Hagerstown."

U. S. Gov. Ptg. Office, Washington, D. C.; 20¢.

New Trends in Vocational Rehabilitation*

MARY E. SWITZER

Director, Office of Vocational Rehabilitation, Federal Security Agency, Washington, D. C.

IN the September issue of the *American Journal of Public Health*, Dr. Herbert Notkin pointed out that a review of the literature in public health from 1942 to 1950, reveals that only five articles on vocational rehabilitation have been published in the major journals. Yet we are all beginning to understand better the broad implications which disability presents and to realize that we may not progress far or fast in dealing with disability unless there is closely-knit relationship between preventive measures, curative medicine and rehabilitation.

Industrial physicians, nurses, and personnel officials have long known that the mental attitude of the worker to his job is much influenced by his confidence in the medical protection he will have should he be injured. If an injury should suddenly occur—and he probably has seen it strike his fellow workers—will he be cared for quickly and thoroughly? Fundamentally, this is the same situation which the military services have recognized for many years; the soldier faces the enemy with greater confidence if he knows that an aid man will be on hand at once if he is wounded, that he will be evacuated quickly and given the best possible care. In much the same manner, the industrial worker's attitude is influenced by whether or not he feels he will get immediate first aid; whether a physician and nurse will be available promptly; and whether he will have a chance to return to work.

To develop this confidence, there is need for a close-working arrangement between in-plant care, later acute service and rehabilitation. If we are successfully to complete the cycle from injury to acute care to rehabilitation, to employment, then these phases of the process must work together effectively.

The problem has been high-lighted by the work of the Task Force on the Handicapped, a group established last spring by the Office of Defense Mobilization to conduct a study of the handicapped and their place in the man power plans of our defense program. As a consultant to that group, I have been deeply interested in their work. Two of those who contributed to this symposium, Stanwood L. Hanson and Kenneth E. Pohlmann, appeared personally with the Task Force to discuss certain phases of rehabilitating and employing the handicapped. Following Mr. Hanson's appearance, some rather interesting figures were developed on time lost between injury and rehabilitation.

The Liberty Mutual Insurance Company has operated a rehabilitation center in Boston since 1943. For all cases served there, the average time between injury and referral to the Center has been 6.4 months. In our state-federal program, which has concerned itself for a long time with the rehabilitation of the injured worker, a special study revealed that some 4,400 persons who had been disabled on the job under workmen's compensation were rehabilitated during

* Presented before a Joint Session of the Industrial Hygiene, Medical Care, and Public Health Nursing Sections of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., October 30, 1951.

1950. For these persons, however, the time lag between injury and referral for rehabilitation averaged 7 years.

It must be obvious to all that this is a real challenge. For those 4,400 injured workers, the difference between 6.4 months and 7 years meant that over 10,000,000 man-days of trained labor were lost. It meant, in effect, that about 41,000 workers were lost for a full work-year. Remember that these were not individuals who *might* have been rehabilitated and returned to work; all of these people eventually *were* employed, but some 7 years were lost before steps were taken for their rehabilitation.

View this situation from any angle and one cannot escape the sense of tremendous waste. For the individuals, it represents a waste of a significant portion of their productive adult lives. For the employer, it represents a waste of trained workers and all the added expense which goes with turnover, recruitment and training of replacements. For the rehabilitation program, it means greater expense and time-consuming effort; it is universally known that the longer rehabilitation procedures are delayed, the longer it takes to complete the work, the greater is the expense and the less the chance of maximum restoration. For the country as a whole, and particularly for the needs of the present defense mobilization program, it represents a continuous drain on our supply of trained workers, many of them having critically-needed skills; we can least afford to lose them at this time.

This whole question acquires additional importance each day as the field of rehabilitation becomes more and more involved with the severely disabled person. Thanks to advances in medical science and to a host of other developments in the past 10 years, individuals are being rehabilitated and returned to work today who would have been considered completely hopeless 10 years ago. As experience has accumulated in dealing with these severely impaired persons, it has become apparent that their needs can only be met by the active participation of an ever-widening circle of disciplines. This is true because of the simple fact that we are dealing with a group of human beings, whose problems and requirements are as diverse as one would encounter in any comparable group of able-bodied persons. Just as the medical practitioner turns to his colleagues in the various specialties for consultation on difficult cases, so must the rehabilitation worker turn to a variety of specialists in medical, social, vocational, educational, and other fields. When this sort of joint attack is made on the question of disability, we may be sure that the handicapped person will receive the finest service that our society can provide.

During the year ending June 30, 1951, more than 66,000 handicapped persons were rehabilitated and employed through the state-federal program. We are rather proud of that record, since it represents the largest number ever rehabilitated in one year. But our pride is tempered by the sober fact that these 66,000 represent only about one-fourth of the men and women who are disabled each year and who need rehabilitation services to return to work. In addition to this annual deficit, there is a backlog of some 2,000,000 who could be added to our productive force in this country if the facilities, funds and personnel were available to do the job. It might be a discouraging task, were it not for the fact that so many professions and so many groups are joining with us to attack the problem. We are deeply interested in the work in industrial hygiene, for the industrial physician plays a key role in the ultimate rehabilitation of the industrial worker. The principle of selective placement of the handicapped worker cannot be fully carried out unless the industrial physician takes an active hand in this work. In

fact, whether or not there is any placement at all, quite often is influenced by the physician, through the choice and application of preplacement physical standards. One survey by the U. S. Public Health Service during the last war, covering 84,000 workers in 10 munitions plants, revealed a spread of from 0.7 to 16 per cent rejections of applicants as a result of physical examinations. These plants were all doing similar types of work. The rejection rates in many would have been substantially higher, if there had not been a preliminary screening and rejection by plant employment offices and local employment offices. Where there was a coordinated plan of hiring practices between the medical, safety and personnel departments, rejections for physical impairments were low; where rigid standards were adhered to on a mass basis, the rejection rate remained high.

Rehabilitation has grown steadily and expanded rapidly because it is inherently a part of the fundamental philosophies of the nation in which we live. This type of work can only exist and thrive in a society which places a high value on the worth of the individual. It has been born in a democratic system which is designed to serve the people who create it. We have insisted from the beginning that every American have his chance. To this end, we have sought equality of opportunity in education, free choice of a job and all the other essentials of free men in a free society. Today, we are insisting that our fellow citizens in their hospital beds, their back rooms, and their wheel chairs have the same opportunity that we have sought for so long for all our people—the opportunity to compete for a job, to live fully, and to work productively among their fellow citizens.

As we join hands with more and more groups, who play such an important role in serving the handicapped, I feel confident that the job will be done.

Disabled Men Work Again*

STANWOOD L. HANSON

Assistant Vice-President, Liberty Mutual Insurance Company, Boston, Mass.

WORKMEN'S compensation laws are probably the most important type of social legislation in the United States, if viewed from the standpoint of the amount of monetary benefits provided to disabled individuals and their families, as well as the amount of medical and hospital services provided to persons who have suffered industrial injury or disease. Every state and territory of the United States has a workmen's compensation law to provide these benefits. Approximately 35,000,000 of our gainfully employed people are entitled to the benefits of such laws, if they meet with industrial injury or suffer from occupational disease.

Because the Liberty Mutual Insurance Company is a leading writer of compensation coverages throughout the United States we are very much concerned with all the problems of industrial disablement. Our initial effort was to reduce accidents through programs of prevention. This work has involved research in the fields of mechnical and chemical safety engineering as well as industrial hygiene and industrial medicine. Our later efforts have led us into the field of rehabilitation, for the purpose of reducing the length and severity of disablement following accidents and industrial diseases which could not be prevented.

Although our compensation laws vary greatly, most of them provide that injured workers will receive a weekly benefit during the period of disability, or a schedule award for the loss of body parts, or the loss of use of body parts for a specific number of weeks. They also provide for the payment of medical and hospital services. In 21 of our compensation laws the payment of weekly benefits for total and permanent disability may extend for as long as the employee lives. In 35 of our compensation laws medical benefits are payable for as long as the medical services are needed; and they may also extend throughout the lifetime of the injured worker. The magnitude of these coverages is not generally realized. In extreme cases, injured workmen may be confined to hospitals and require medical treatment for many years or may, in fact, be required to live in a hospital or convalescent home for their entire lives. Unless some method of rehabilitation can be found, the ultimate cost in such cases can run into several hundred thousand dollars under certain of our state or federal laws.

Because of the tragedy of serious disablement, as well as the high cost, we decided some 10 years ago to make a special study of these long-term and permanent disability cases to see if there was some way to rehabilitate these people. Because hindsight is more revealing than foresight, an analytical study of a sizable group of the long-term disability cases in our files helped us very materially in orienting our thinking on this problem.

In many cases permanent disability was caused by errors in diagnosis that had been made in the beginning, which intensified rather than lessened the re-

* Presented before a Joint Session of the Industrial Hygiene, Medical Care, and Public Health Nursing Sections of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., October 30, 1951.

sults of injury. Errors in the psychological handling of the individual often meant that we were not able to get his coöperation in medical services and programs that would lead to his restoration. Where medical services were excellent and hospital records described patients as discharged cured, our files disclosed that months and years later many persons were still disabled and unemployed because of the lack of adequate programs following hospitalization. It was evident that more comprehensive programs were necessary for the vocational reëducation of certain individuals who had suffered permanent partial disability and were prevented from returning to their former trade. Also involved was the highly technical matter of the placement of handicapped workers on jobs in which they could be both safe and productive.

As a part of our research we also studied projects under way in the United States and Canada for the rehabilitation of seriously injured or handicapped people. We concluded from all of these studies that a great deal could be done through a planned process of rehabilitation. Although we always had undertaken to provide the very best medical, surgical and hospital services for injured workmen, in order to bring about their early recovery, we decided that we would incorporate a number of additional services. These activities are designed to correct some contributing causes of disability brought to light by our studies.

In an effort to reduce possible errors in diagnosis we have engaged medical advisers in over 30 of the larger industrial cities in the United States. These doctors have been chosen from the field of orthopedic surgery and are leaders in the specialty in their respective communities. The advisers review the medical facts of our serious injury cases in the early stages of surgical care. They consult with the treating physician and often recommend specialized examinations or clinical studies to assist in arriving at a correct diagnosis and the determination of future treatment. This service is entirely aimed at aiding the attending physician and giving him all possible help in his handling of the case. It is also the purpose of this program to bring the same type of clinical diagnosis usually found only in the large medical centers within the reach of every seriously injured workman. We have found this to be one of the most valuable steps that we ever have taken in connection with the handling of the problems of industrial disablement.

To deal with cases that were discharged from hospitals as cured, but which continued to be disabled because of stiffness in joints, atrophy of muscles, burn scars, poor circulation, amputated arms or legs or partial paralysis, we decided that we must have a place to render services that would overcome these disabilities. Accordingly, the Liberty Mutual Insurance Company opened its first rehabilitation center in Boston in June, 1943, and a second center in Chicago in January, 1951. These rehabilitation centers are operated under careful medical supervision. The facilities are designed to bring about physical restoration of the individual, to give him a mental stimulus, and to restore his confidence so that he can return to industry with a maximum of physical and mental ability. When a patient is admitted to the center we again give consideration to the problem of diagnosis. He is examined by the medical director of the center, who is an orthopedist, to determine the nature of his injury and the course of his treatment. This is done so that we may be certain no further surgery is required to minimize the disability and so that the technicians at the center may be carefully instructed as to the treatment to be given. At time of admittance the patient is also examined by an internist in order to ascertain his over-all physical condi-

tion. A chest x-ray is taken to rule out tuberculosis; blood studies are made to discover any underlying condition that might complicate the patient's recovery or call for modification of treatment. These examinations all have to do with the basic principle of treating the patient as a whole as well as the injured part.

The services at the centers include physical therapy, occupational therapy, and recreational therapy. Patients remain at the centers all day, five days a week. Under the supervision of physical therapists, modalities of heat, massage, diathermy, hydrotherapy, and exercise are utilized. Coördinated activities of occupational therapy are carried out in a workshop where the patients make all types of things out of wood and metal. The articles made are designed to stimulate patient interest in not only going to but remaining at the center for treatment. The interest and confidence of the patient is aroused through the competitive or creative work projects. The provision of all materials and the fact that the finished work may be taken home are important incentives. Once patient interest is gained, fear diminishes and confidence is restored. Recreational therapy is also included in the services because it has great value as exercise and coördination of body parts. Underlying this whole effort is the objective of getting the patient to find his own motivation for activity. In other words, to do for himself. During the process of recovery, the employee's doctor and the employer are kept posted on progress. Then the decision is made as to whether the worker will be able to return to his regular employment. If he cannot, it must then be decided whether he can return to any type of employment that his employer can provide. If the employer can offer nothing, the question then arises as to the possible need for vocational reëducation or appropriate employment in some other industry.

These problems of placement are carried out for us by specially-trained degree nurses. We call these women rehabilitation nurses, and they are trained to counsel seriously injured men and women. Earlier, I referred to the fact that certain cases got off to a bad start because errors were made in the psychological handling of seriously injured people. One of the main reasons for employing rehabilitation nurses is to improve this psychological work. The nurse calls on badly injured workers early in the process of their recovery. Usually this is done during their hospital stay. The nurse explains to the patient what he is to receive for benefits; what medical services are to be provided; and what arrangements are going to be made for his rehabilitation, if he wishes to go through a process of rehabilitation. He is made confident that he can work again and that suitable employment will be available when he has recovered. His over-all problems are discussed and the nurse undertakes to find the answers to any difficulties which might militate against his recovery. She often works with the attending physician as well as the employee's family in solving these problems. She coördinates the man's entire program of rehabilitation, including his return to employment. This may include arrangements for his transportation to one of our rehabilitation centers, or to a community rehabilitation center in his own city or state. When aptitude testing is needed and vocational reeducation is necessary, she works with either state departments of vocational reëducation or private agencies to see that such processes are carried out. She works with employers to maintain their interest in the injured worker and clears the way for placement on a safe and productive job and sees to it that his readjustment to industry is complete.

We have found, in the handling of amputee, paraplegic, and quadriplegic cases, that the services of a rehabilitation

counselor are indispensable to the coordination of the case. In the early stages of these cases, psychological guidance of the individual and his family is necessary. Later on, very practical guidance is needed in connection with selecting prostheses or braces; in arranging for the fitting of these artificial devices, either at one of our rehabilitation centers or at some other agency; and in providing for the teaching of the patient to use these devices. The nurses arrange for instruction in the driving of automobiles with special devices for patients who have lost the use of legs or patients who have to learn to drive with artificial arms. Unless there is this coördination from beginning to end, the whole process of rehabilitation becomes disjointed and may break down. In the chain which is no stronger than the weakest link, if we leave out a link, we have no chain at all.

In our Boston Rehabilitation Center we have treated over 2,000 cases and of those whose treatment has been completed two-thirds have been returned to productive employment. The results of our amputee program at the Boston Rehabilitation Center are even better. Nearly 200 cases of major amputation have been processed there. All of the amputees whom we have handled are wearing their artificial arms and legs successfully, and three-fourths of them have been returned to actual jobs.

Compensation laws do not require that we render this kind of service. We are providing rehabilitation services because everyone gains by our doing so, first the employee himself, second the employer, and third, ourselves. The exact amount that we save through rehabilitating these men and women cannot be measured in dollars and cents. We do know that we are saving a great deal by returning these people to industry and thereby lowering compensation payments on cases that would never be returned without the benefit of these services. We are also saving by restoring motion to arms, legs, hands, and feet and thereby reducing the amount of schedule awards that these workers would receive. In the case of bilateral amputees and paraplegics we are saving a great deal in future costs of hospitalization, maintaining these people in convalescent homes or of providing them with attendant care. All of these services are provided without cost to the injured worker. His transportation is paid to Boston or Chicago, and his meals and lodging are paid for during his rehabilitation program. During the last fiscal year of operating our Boston Rehabilitation Center, the cost of treating the average case amounted to $480.

Although we still have many failures, our successes outweigh our failures, and our gains in human values and in dollars far exceed the cost of providing these services of rehabilitation.

Rehabilitation of Disabled Miners*

KENNETH E. POHLMANN, F.A.P.H.A.
Rehabilitation Officer, United Mine Workers of America Welfare Retirement Fund, Washington, D. C.

WHEN the medical program of the UMWA Welfare and Retirement Fund was set in motion in 1948, there was statistical evidence to show that we had an accumulated backlog of more than 50,000 miners incapacitated for work because of injuries or disease. We believe that many of these individuals might have lived out the remainder of their days without any real effort being made to restore them to useful living, if the Fund had not come into being to provide the health, medical, and rehabilitation services essential to their needs.

At the time we embarked upon our rehabilitation efforts, there did not exist in any of the major coal mining areas of the country, adequate facilities or personnel to provide physical rehabilitation services. Because of this situation, we had no choice but to provide such services in distant medical centers, where we were able to mobilize medical skills, vocational guidance and counseling work, and related services in a teamwork combination directed toward meeting the total rehabilitation problems which faced these severely handicapped patients. At the same time, we took steps to bring the medical center teams into a closer working accord with the official agencies working in the rehabilitation field, nationally and locally. Vocational rehabilitation counselors, and, in some instances, selective placement personnel in the medical center areas representing the federal-state network of rehabilitation and employment agencies joined with medical center teams in staffing cases. They acquainted the official agency personnel in the areas from which the individuals came with what was being done for them and what their potentials, both physical and vocational, might be. In turn, they sought from these local representatives, information which could be helpful in making plans for subsequent vocational training or adjustment.

Many of these severely disabled miners, during the course of their physical rehabilitation, are given opportunities to explore numerous vocational training possibilities. In some instances vocational training can be carried on concurrently with physical rehabilitation. This can be accomplished either in the center itself or in a near-by training facility. In California the Kabat-Kaiser Institute has arrangements whereby on-the-job training may be secured through the coöperation of the California State Vocational Rehabilitation Bureau and the rehabilitation agency in the state from which the patient comes. However, in most cases it has been found desirable to transfer the patient from the medical center where the major emphasis is placed upon his medical problems to a facility where it is placed upon vocational training, with such physical therapy, medical maintenance and supervision as are needed. These are related to training and to adjustments which may be necessary to employment situa-

* Presented before a Joint Session of the Industrial Hygiene, Medical Care, and Public Health Nursing Sections of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., October 30, 1951.

tions. Many severely handicapped patients, after they are over the acute phases of their physical rehabilitation, can be enrolled in a regular vocational trade school, with only a minimum of medical maintenance and supervisory care. Certain qualified vocational trade schools are able to offer such patients training for selective placement in competitive or self-employment positions. (For example, the Williamsport Technical Institute, Williamsport, Pa., which is described below.)

More than 900 severely disabled individuals have benefited from this program since June, 1948. Of this number, over 600 have been returned to their local communities. More than half of these are receiving services from state rehabilitation or related agencies, including training for new vocations intended to make them self-supporting. More than 100 were successfully rehabilitated and employed at last count.

How do we find our physically handicapped? One source of patients is through our medical care program. Through ten Area Medical offices, conveniently located throughout the coal mining areas, we have made arrangements with physicians and hospitals to provide medical services to all miners and their dependents in hospitalized cases. From information submitted by both physicians and hospitals on certain of these hospitalized cases, feasibility for rehabilitation services is determined. Many physicians and hospitals work closely with the Area Medical staffs in arranging for medical rehabilitation services for such patients.

Another source is miners, incapacitated for work because of injuries or disease for six months or longer, who apply for rehabilitation or maintenance aid grants from the Fund. They are examined by qualified physicians. If they can be rehabilitated, the examining physician so indicates in his report to the Area Medical office. Often he takes the initiative and makes arrangements for necessary medical rehabilitation for the patient.

A third source is the UMWA itself. District and local union officials are in constant touch with the membership and, through daily contacts, often discover persons in need of these services. During the initial phases of our rehabilitation program, the union leadership was largely responsible for tracking down severely disabled miners, many of whom had been forgotten completely by the community as a whole. Through the compensation departments of the district UMWA offices we also have been notified of accident cases requiring medical rehabilitation services. Through arrangements with state compensation funds or insurance carriers, many miners have been sent to special rehabilitation centers. In passing, it should be noted that the woeful inadequacy of compensation medical benefits in severely disabled cases in most coal mining states is a disgrace to our free enterprise system.

Thousands of our disabled miners did not need the services of outside medical centers, although their injuries or illnesses were such as to disqualify them for employment in the coal mining industry. Faced with the problem of referring hundreds of these individuals to state rehabilitation agencies, employment offices, and the like, we had to develop simple procedures for so doing.

Our Area Medical staffs found that they could serve our handicapped beneficiaries best through what we have come to call "conference clinics." These clinics are held in places readily accessible to the individuals concerned. Each handicapped person is notified, usually through the UMWA district office, of the time and place of the clinic and of the purpose it is to serve. Community agencies thought to be concerned with the problems of these individuals are asked to have representatives present.

State agencies, such as the Division of Vocational Rehabilitation, the Department of Public Assistance, the Veterans Administration, the Employment Service, have been involved at one time or another in planning the development of such conference clinics; and their representatives have participated. Voluntary agencies, such as TB associations and visiting nursing groups, also have figured importantly in the matter of staffing.

In advance of the clinic we will usually have assembled such information on each case as is readily available, from our files or from other sources. When the individual arrives, he is interviewed by a member of our staff. Where possible, a member of some appropriate organization to which he belongs, one whom he feels can represent his interest, also participates in this initial interview. This person may be a parish priest, a local union representative, a relative, a close personal friend—whoever fits into the role. Next, our staff interviewer refers the individual to the appropriate community agency representative, who confers with him concerning his problem. If it is deemed desirable, representatives from other community agencies concerned may also be asked to interview the individual. Arrangements are made so that informal discussions can be developed.

The purpose of these clinics is simple —they are intended to orient the individual to the assistance available from the participating agencies; and to initiate specific plans for obtaining whatever is needed. Thus, individuals are screened; the problems of particular concern to them are brought to the attention of the appropriate agencies for review and such action as is indicated; the end result in most cases is that some plan is worked out to meet the individual's problems.

These conference clinics have already proved invaluable. Specific recommendations on a given case can be developed and agreed upon by the agencies concerned while the individual is present, and with his concurrence. The individual benefits from this staffing of his case because he not only finds out what community resources can be brought to bear upon his problems but also learns what is expected of him. Further, there is much to be gained by the agencies' representatives from working together on individual cases. Illustrative is a case which the rehabilitation agency records wrote off with a definite "Not Feasible." An interview at the clinic by the local state employment service representative revealed that the man was a straight placement problem, and that his work experience qualified him for immediate employment. Most significant has been the effect of these clinics on the communities themselves; they have served to high light the positive social welfare implicit in rehabilitation, and have brought to bear upon the problems of the handicapped resources hitherto untapped—or unrecognized.

Case-referral activities of the sort described are of only academic value unless we can measure their results. What happens to the referred individuals should be of interest to the referral agency. Therefore, an adequate follow-up program is essential. We have found that the use of a "Vocational Rehabilitation Progress Report" which provides for reporting back to our agency on every referral we make to the state vocational rehabilitation agency has been most helpful. These reports are so designed that a minimum of information is required from the local vocational rehabilitation counselor; in effect, his office secretary need only refer to the file folder on the individual to determine his status. Periodically, our Area Medical staffs check back with local vocational rehabilitation counselors on referrals, determine their status, and where necessary, arrange for conferences on

those cases upon which action may have been delayed for some reason or other. Less formal reporting is required in dealing with some of the other agencies, since they have come to rely upon the vocational rehabilitation agency to assume the leadership with handicapped cases. If the local vocational rehabilitation counselor works out an arrangement with the selective placement officer of the state employment service on an individual and the person is placed on a job, we are made aware of this action.

In recent months there has been much discussion as to what role the physically handicapped should play in the expanding defense program. We have seen this as an opportunity to mobilize local community resources to the end that physically handicapped individuals can find a place on the production line.

Our first efforts were centered at the Williamsport Technical Institute at Williamsport, Pa. Here we have worked out an arrangement with the Pennsylvania Rehabilitation Bureau, the Williamsport Technical Institute, and local physicians, whereby some of the physically handicapped individuals seen at our conference clinics are sent to the Williamsport Technical Institute for vocational evaluations. These consist largely of thirty-day workouts in the various shops, counseling and guidance, and such psychological and other aptitude testing as may be necessary. This service is provided through the Bureau of Rehabilitation. Subsequently, a training program is developed for each individual and arrangements are concluded whereby medical maintenance and supervision are provided during the remainder of his stay at the Institute. Counseling and guidance are furnished the individual during his training period. At the conclusion of his training, job placement is accomplished through arrangements with industrial plants. We hope to develop similar plans in other coal mining areas.

There are many needs still to be met in the rehabilitation of disabled miners. These include: (1) the need for good community hospitals where there are none at all, or where existing hospitals are entirely inadequate to meet requirements; (2) the need for better understanding among local physicians, many of whom are not familiar with what can be done by modern medicine in the physical rehabilitation field, nor with counseling and guidance in vocational retraining and rehabilitation; (3) the need for the application of public health, preventive medicine, and health education throughout the coal fields. (Such measures are either woefully inadequate, or entirely absent); (4) the need for a better understanding of the concept of rehabilitation by state and county departments of public assistance to the end that positive social welfare can be promoted, and (5) the need for federal and state agencies to consider adjustment allowances to persons being rehabilitated. (These are particularly important when the possibilities for resettlement are being considered because local job opportunities are nonexistent or unsatisfactory.)

Many of these needs must wait upon a better understanding of the problems of the handicapped and an aroused public concern. We know from our experience what can be done to transform hopeless and helpless cripples into self-supporting and self-respecting citizens. We know how important, in this process, is the support of many individuals and organizations in local communities. Both they and we have seen what can happen to human beings when they are given a little encouragement. In our small way, we hope we are on the right track.

Viability of *Escherichia coli* in Acid Mine Waters*

J. MEHSEN JOSEPH AND DONALD E. SHAY

Department of Bacteriology, University of Toledo, Toledo, Ohio; Department of Bacteriology, University of Maryland, Baltimore, Md.

PUBLIC health officials have been interested for some time in the probable transmission of disease by acid mine streams. Prevailing acid conditions suggest the destruction of pathogens that gain access to such streams. Therefore, many investigators have concluded that polluted streams receiving acid mine drainage are rapidly self-purified, bacteriologically speaking, due to the high acidity acquired. Roetman's studies (1932) corroborate the idea of self-purification by employing acid mine waters to sterilize sewage. However, the authors believe that experiments attempting to simulate conditions in the laboratory are not entirely satisfactory.

Davidson (1932) attributes the detrimental effects of acid mine waters to the following: (1) high degree of acidity, (2) hyperconcentration of ferric compounds, and (3) ingestion of microbes by protozoa. Self-purification is apparent in *in vitro* testing, and to a more profound degree than would be expected *in situ*.

Lackey (1938) investigated the flora and fauna of waters that receive acid mine drainage in several states. He merely reported the possible existence of saprophytic microbes without reference to any special groups. In later studies Joseph (1949) provided confirmation by isolating and identifying numerous species of bacteria from acid mine streams. A few dormant pathogens which had resisted acid conditions for considerable periods of time were included in this group.

The authors believe that more exact studies than those heretofore reported are required to evaluate the public health significance of streams to which acid mine drainage issues. Studies were instituted to determine the dissemination of typhoid fever and other diseases by testing, indirectly, the viability of *Escherichia coli*, the organism used as the index of fecal pollution. Determination of the longevity of *E. coli* in acid streams was used as a suggestive index of probable disease transmission. Self-purification studies were performed *in situ* as the streams progressed through their normal channels.

MATERIALS AND METHODS

From several streams receiving acid mine drainage, samples were collected in previously sterilized (autoclaved) sampling bottles by submerging the mouths of the bottles against the current. Only those streams having a hydrogen ion concentration from *p*H 2.0 to *p*H 4.5 were examined. Sampling bottles were filled to capacity to eliminate any air space, which tends to retard very vigorous chemical reactions taking place in the presence of available oxygen. Samples were returned immediately to the laboratory and analyzed as soon as possible, but if kept for any length of

* Acid mine streams in northern West Virginia and in Pennsylvania were examined.

time, they were well-stoppered and stored in the refrigerator.

The samples were plated on various media, Endo agar, E.M.B., desoxycholate agar, nutrient agar, desoxycholate - citrate - lactose - sucrose agar and MacConkey agar, which support the growth of Gram-negative, nonsporeforming bacilli. Several types of broth combinations were prepared and inoculated with a loopful of mine water; streaks were made from these broth samples (enrichment for Gram-negative bacilli) onto the aforementioned agars in an attempt to procure pure cultures of *E. coli*. Pure cultures were numbered and transferred to fresh media for later studies on longevity.

Concurrently with this procedure, dilutions were prepared from the samples and tubes of lactose broth were inoculated; the serial dilutions were, 1:10, 1:100, 1:1T, 1:10T, and 1:HT. From the results the most probable number of coliforms per 100 ml. was determined. Any of the above tubes which were gas-positive were streaked on E.M.B. and Endo agars. Gram stains were prepared from characteristic colonies appearing on the plates and lactose broth tubes were inoculated. Special differential media were employed for further verification.

Longevity Studies—Pure cultures of *E. coli* isolated from acid mine streams were employed in the investigation of the period of survival at various *p*Hs. Samples were collected having *p*Hs of 2.0, 2.5, 3.0, 3.5, 4.0, and 4.5. Two ml. of an 18-hour broth culture of *E. coli* were inoculated into each of the samples. Dilutions were immediately prepared from the broth culture and quantitative counts determined according to standard procedures. This method gives an estimation of the number of organisms inoculated into each sample and serves as a check on the viability of the organisms. After ½, 1, 2, 4, 8, 16, and 24 hours from the time of inoculation, standard quantitative plate counts were run on all samples. This method gives insight into the rate of reduction.

Self-purification—Three samples were collected from each stream receiving acid mine drainage and fecal pollution. Each sample was collected at a definitely marked point along the stream and labeled Group I, Group II, and Group III.

Samples of Group I were collected from the streams at a point where no influent acid mine drainage was received. The streams received pollution from privies along their banks and from other debris as they passed through a settlement.

Samples of Group II were collected approximately one mile below the point of entrance of acid mine drainage. This point was located in a settlement through which the streams passed. These streams also received heavy pollution from privies along their banks and from other debris.

Samples of Group III were collected at a location approximately four miles below the point where the samples of Group II were collected. These streams received very little pollution other than that which was mentioned in relation to the previous groups.

Samples of the three groups were examined immediately after collection by the standard quantitative plate method; by the method of most probable number of coliforms; by the standard method of water analysis for the detection of *E. coli*, and by the method of most probable number of gas producers.

EXPERIMENTAL RESULTS

The presence of *E. coli* was shown in every acid mine stream examined. Counts were greatly reduced over the expected number with respect to the enormous amount of fecal pollution issuing into these streams. Results in

TABLE 1

Analysis of Acid Mine Waters for the Presence of E. Coli

Stream	*pH*	*Lactose Broth Acid/Gas*	*Colonies on E.M.B. and Endo agars*	*I. M. Vi. C.*	*MPN of Coliforms per 100 ml.*
A	2.4	A/G	positive	+ + − −	20
Control A	7.6	A/G	typical	+ + − −	1,600
B	2.0	A/G	positive	+ + − −	49
Control B	7.8	A/G	typical	+ + − −	3,300
C	2.8	A/G	positive	+ + − −	24
Control C	7.5	A/G	typical	+ + − −	2,300
D	4.0	A/G	positive	+ + − −	96
Control D	8.1	A/G	typical	+ + − −	5,800
E	3.6	A/G	positive	+ + − −	62
Control E	7.1	A/G	typical	+ + − −	1,300

Table 1 indicate survival of coliforms in a paucity of numbers but to a degree of possible public health significance. Controls in Table 1 were samples taken from streams above the point where acid mine drainage entered and where the *p*H was neutral or alkaline.

Longevity studies on *E. coli* at *p*Hs 2.0, 2.5, 3.0, 3.5, 4.0, and 4.5 indicated rapid reduction within the first two hours. Table 2 will elucidate more emphatically the reduction in numbers for varying hours of contact. The reduction at *p*H 2.0 was 96 per cent after one hour of contact, and at *p*H 2.5 the rate of reduction was 91 per cent after 4 hours of contact. As the *p*H was increased in a geometric progression of 5 the time required for 90 per cent reduction was increased by approximately 4 hours in each step. Although the detrimental effects of acid mine waters are tremendous, there is still the possibility of dormancy and actual resistance.

Self-purification rather than self-sterilization as stated by some investigators would be inferred from the data given in Tables 3 and 4. The profound reduction in the bacterial count for samples of Group II in Table 4 when subjected to the short exposure of acid mine drainage for a distance of one mile is remarkable.

In spite of the fact that counts recorded in Table 4 suggest the destruction of pathogens and the existence of acidophilic and aciduric organisms, i.e., these samples were shown to contain viable numbers of *E. coli*. As the streams progressed further they received very little pollution and no acid mine drainage, but there was a noticeable increase in the bacterial content (Table 4) and a slight decrease in acidity. Self-purifi-

TABLE 2

Rate of Reduction of E. Coli in Contact with Acid Mine Waters

Period of Contact Hours	Average Count in Thousands; 37° C. for 24 hours — Samples 4H *p*H 2.0	4J *p*H 2.5	4K 3.5	4L 4.5	Per cent Reduction — Samples 4H *p*H 2.0	4J *p*H 2.5	4K 3.5	4L 4.5
0	80	200	600	400	0.0	0.0	0.0	0.0
½	16	99	398	390	79.0	50.5	33.7	2.5
1	3	80	390	387	96.3	60.0	35.0	3.3
2	4	70	300	300	95.0	65.0	50.0	12.5
4	3	18	105	350	96.1	91.0	82.5	12.3
8	2	4	78	100	97.5	98.0	87.0	75.0
16	0.9	1	32	63	98.8	99.5	94.7	84.3
24	0.24	23	1	1	99.7	99.9	99.7	99.8

TABLE 3

Bacterial Count on Samples of Group I Collected Above the Point of Entrance of Acid Mine Drainage

Streams	pH	Sample Number	Plate Count on Nutrient Agar; 37° C. for 48 hrs.
A	7.5	1	7,000,000
	7.6	2	15,000,000
	7.5	3	1,300,000
B	7.8	1	3,900,000
	7.6	2	1,800,000
	7.6	3	7,000,000
C	6.5	1	600,000
	6.9	2	1,000,000
	6.8	3	1,000,000
D	7.8	1	1,500,000
	7.8	2	7,000,000
	7.9	3	11,000,000

TABLE 4

Bacterial Count on Samples of Group II and Group III Taken One Mile and Five Miles Below the Entrance of Mine Water

	1 Mile—Group II		5 Miles—Group III	
Stream	Av. pH	Plate Count on Nutrient Agar; 37° C. for 24 hrs.	Av. pH	Plate Count on Nutrient Agar; 37° C. for 24 hrs.
A	2.2	7,000	4.0	470,000
		4,000		200,000
		19,000		360,000
B	2.75	10,000	3.85	90,000
		15,000		180,000
				330,000
C	2.0	33,000	3.75	150,000
		13,000		90,000
		26,000		230,000
D	2.1	13,000	3.8	80,000
				150,000
				95,000

cation is absolutely implicated by *in vitro* tests, but testing streams in their natural environment yield less striking results.

In a more exact sense one might state that self-purification is approached to a marked degree; yet, these streams remain sources of possible disease producing organisms.

DISCUSSION

Pollution remains a problem in acid mine streams. Many investigators have considered acid conditions sufficient for the eradication of pathogenic bacteria commonly transmitted by waters, but this study suggests that the survival of disease-producing microbes may be possible. Public health control and frequent inspection are therefore required.

Even though the problem of disease transmission appears to be one of cardinal significance in regard to children using these streams as bathing areas, the authors believe that the hyperconcentration of iron compounds is also of importance. Such compounds may be dangerous to children.

Analysis of acid mine water by Joseph (1949) revealed the following figures:

*p*H 2.0; total acidity, 9,170 p.p.m.; total iron, 19,104 p.p.m.; ferrous iron, 586 p.p.m.; ferric iron, 3,780 p.p.m.; total sulfates, 18,300 p.p.m.; calcium, 570 p.p.m.; magnesium, 56 p.p.m.; and total residues, 40,072 p.p.m. These figures were given for a single stream only for there is tremendous variation from one acid stream to another. Waters having a range of *p*H 2.0 to 2.9 gave the following ranges of concentrations: acidity, 196–106,000 p.p.m.; total residues, 7,700–40,000 p.p.m.; calcium, 145–300 p.p.m.; magnesium, 20–55 p.p.m.; sulfates, 100–18,300 p.p.m.; ferric iron, 30–3,900 p.p.m., and ferrous iron 20–1,200 p.p.m. Carpenter and Herndon (1933) investigated acid mine drainage before its entrance to streams, and their report provides an excellent review of the analysis of acid wastes.

Since acid mine waters contain elements that are objectional, their disposal has engaged the attention of many agencies concerned with the abatement of this condition. An extensive air-sealing program was instigated in an attempt to reduce the oxidation of sulfur and sulfur-bearing compounds in abandoned mines. This would result in smaller amounts of soluble acid-producing compounds. The reaction assumed to take place is the oxidation of iron disulfide to ferrous sulfate and sulfuric acid:

$$2FeS_2+7O_2+2H_2O \rightarrow 2FeSO_4+2H_2SO_4 \quad (1)$$

When these waters are exposed to atmospheric conditions a rapid oxidation of ferrous to ferric sulfates occurs:

$$4FeSO_4+2H_2SO_4+O_2 \rightarrow 2Fe_2(SO_4)_3+2H_2O \quad (2)$$

Subsequent hydrolysis of ferric sulfate yields ferric hydroxide:

$$Fe_2(SO_4)_3+6H_2O \rightarrow 2Fe(OH)_3+3H_2SO_4 \quad (3)$$

Ferric hydroxide is precipitated in the stream and imparts a characteristic rusty color. The production of sulfuric acid results in a high degree of acidity.

In addition to the sealing process, chemical treatment has been suggested to modify or rid water of its undesirable constituents. Since chemical treatment is expensive and results in the accumulation of large quantities of sludge, this method is not feasible.

Colmer and Hinkle (1947) were the first to show that microörganisms have an active role in the precipitation of ferric hydroxide and the formation of sulfuric acid. They were able to isolate a bacterium similar to, if not identical with, *Thiobacillus thiooxidans* and several fungi of the genus *Spicaria* from acid mine streams which oxidize ferrous sulfate to ferric sulfate and sulfuric acid. By complete characterization of microorganisms concerned in the formation of acid mine waters, they hope to abate or mitigate this extremely undesirable condition. Studies of the microflora and microfauna are in progress.

E. coli was employed as the index organism in longevity studies, since its tolerance of acid conditions may be reflected by pathogenic forms. It can withstand high acidities for prolonged periods sufficient to condemn acid mine streams. Factors other than acidity are operative in reducing the viable numbers of coliform organisms, thus, *in vitro* tests are not absolute values. Several species of fungi and protozoa exemplify microbial forms which aid in diminishing the coliform count. Hyperconcentration of ferric and ferrous compounds also plays a major role.

Self-sterilization of domestic sewage by acid mine waters *in vitro* as reported by Carpenter and Herndon (1933) is not attainable as the stream flows in its course. It would be more appropriate to suggest partial self-purification, since the term "sterilization" connotes complete destruction of all living organisms. The data reported here imply a rapid decrease in the bacterial content after a short period of exposure to acid mine waters, but the quantity of organisms remaining is significant.

SUMMARY

All waters of extreme acidities and of pollution with fecal material and mine wastes which were examined support the growth of a few microörganisms, including bacteria and numerous fungi. *E. coli* is among the bacteria which can sustain acid conditions in small numbers. Its tolerance may be indicative of the ability of the typhoid bacillus and other waterborne pathogens to be present.

The longevity of *E. coli* in acid mine waters was determined as substantial evidence of its tolerance. The rate of reduction on contact is rapid, but a small number sustained the 24-hour testing period even at a *p*H 2.0.

Self-purification studies were undertaken *in situ*. Factors active in this process are acidity, toxicity of compounds present, antagonistic action of microörganisms, food supply and ingestion by protozoa. In spite of these unfavorable processes, self-purification is only partial and not complete.

Public health measures must not be neglected on the basis of acidity and other adverse conditions.

BIBLIOGRAPHY

Carpenter, L. V., and Herndon, L. K. Chemical Analysis of Acid Mine Drainage. *West Virginia Univ. Eng. Exper. Sta. Bull.* No. 10, 1933.

Colmer, A. R., and Hinkle, M. E. The Role of Microorganisms in Acid Mine Drainage: A Preliminary Report. *West Virginia Univ. Agri. and Eng. Exper. Sta. Bull.* No. 373, 1947.

Davidson, A. H. *Acid Mine Drainage From Bituminous Coal Mines.* Thesis, Civil Eng., West Virginia Univ., 1932.

Joseph, J. M. *Study of the Microflora and Microfauna of Acid Mine Waters.* Unpublished, 1949.

Lackey, J. B. The Flora and Fauna of Surface Waters Polluted by Acid Mine Drainage. *Pub. Health Rep.* 53:1499–1507, 1938.

Roetman, E. T. *The Sterilization of Sewage by Acid Mine Water.* Thesis, Civil Eng., West Virginia Univ., 1932.

A New English Statistical Journal

Applied Statistics is the title of a new journal of the Royal Statistical Society which began publication in March, 1952. Because, says its announcement, "the more mathematically trained statistician has long been well served," the Journal will be "devoted to the practical statistical problems that arise in so many fields of activity." The Journal will be issued three times a year: March, June, and November. Its editor is L. H. C. Tippett of the British Cotton Industry Association. Publishers, Oliver and Boyd Ltd., Tweeddale Court, High Street, Edinburgh 1, Scotland. 25s (U. S. A. $4).

Further Inquiry into the Antibacterial Properties of Cationic and Anionic Detergents

A Comparison of an *in vitro* and an *in vivo* Method of Evaluation

BERKLEY H. JOHNSON, HOYO MIGAKI, AND E. C. McCULLOCH, D.V.M., PH.D.*

Bacteriologist, Walla Walla, Wash.; University of Oregon Medical School, Portland, Ore.

GERMICIDAL studies of surface-active agents, using the conventional phenol coefficient method of evaluation, have revealed vast differences between these compounds and other groups of antibacterial agents. The cationic and the anionic surface-active agents as a group present undeterminate and inconsistent end points and erratic behavior. Many factors have been considered as possible causes of the inconstancy of results (McCulloch, 1947; Klarmann, 1946; Glassman, 1948; Weber and Black, 1948; Migaki and McCulloch, 1949), and new technics as well as modifications of standard procedures have been applied in efforts to evaluate these substances more critically. Certain reports to date have credited the quaternary ammonium group of compounds with remarkable bactericidal powers under a wide variety of conditions; others have questioned the efficacy of these compounds under conditions of practical application.

Numerous *in vivo* as well as *in vitro* evaluation methods have been employed. Studies of the efficiency of quaternary ammonium compounds in surgical procedures have produced apparently satisfactory results; procedures employing the developing chick embryo have been described; toxicity studies have been applied to the study of the quaternary ammonium compounds.

Kenner *et al.* (1946) reported an *in vivo* method for determination of germicidal potency of cetyl pyridinium chloride which involved a modification of the F. D. A. method (Reuhle and Brewer, 1931) wherein determination of killing dilutions was accomplished by inoculation of test mice instead of subculturing in F. D. A. broth. In their report, no indication was given of the actual degrees of virulence of the test organism exposed to the disinfectant; indication was given, however, that the results obtained *in vivo* were corroborated by the results obtained *in vitro*.

It is the purpose of the present report to describe the application in part of a similar technic for the comparative study of an *in vitro* and an *in vivo* method of disinfectant evaluation. In this report, the term "disinfect" implies the process of rendering pathogenic bacteria noninfective to the host, while the term "bactericidal" denotes complete destruction of the exposed bacteria. The study involved an attempt to determine whether or not survivors of a virulent bacterial strain exposed to the action of specified concentrations of a cationic and anionic agent using the described procedures would reveal themselves as suf-

* Deceased.

ficiently reduced in infection-producing power to prove avirulent; whether theorized "aggregates of exposed cells" would be detoxified and revived after introduction into the animal body, or whether a negative plate count reading employing an *in vitro* method would compare favorably with a lack of infection in mice using an *in vivo* method. The fact is recognized that, for purposes of practical application, correlations of results of both *in vitro* and *in vivo* methods would prove more significant than results obtained employing but a single test method.

EXPERIMENTAL PROCEDURES

Test Organism—Preliminary tests were conducted using a variety of organisms in attempts to find a suitable test strain. Criteria upon which selection of organism was based were: virulence sufficient to produce rapid infection and death in test mice injected intraperitoneally with relatively small numbers; susceptibility to action of the cationic and anionic compounds used, and ease of cultivation on laboratory media. Final selection was made of a highly virulent strain of *Salmonella typhimurium*. In order to enhance the virulence of the strain, the organism was passed serially through 35 mice, using an inoculum of 0.25 ml. blood from an infected moribund mouse exsanguinated from the exposed heart, until such inoculation produced death within a period of 5 hours.

Maintenance of Virulence of Organism—Virulence was maintained by continued inoculation of mice, using infected blood. A mouse dying within 5 hours following injection of 0.25 ml. blood from a previously infected mouse was refrigerated at —10° C. Several days prior to initiation of an experimental series, the animal was restored to room temperature; 0.25 ml. blood was withdrawn, and the material injected into another mouse. The process was repeated serially until such inoculation again resulted in death of a mouse within a period of 5 hours. The mouse was exsanguinated immediately following death, and 0.25 ml. of blood were injected into each of two mice. The latter mice were bled when they approached a moribund state; the blood was pooled, and approximately 1 ml. was injected intraperitoneally into a guinea pig weighing ± 250 grams. Inoculation of a guinea pig assured a sufficiently large volume of infected blood for execution of an experimental series.

Maintenance of High Bacterial Count in Infected Blood—Samples of heart blood from certain guinea pigs thus inoculated failed to present organisms in numbers sufficient to prove suitable for the test procedures. In such cases, a "booster" dose of several ml. of an 18-hour broth culture of *S. typhimurium* was injected intraperitoneally into the moribund animal. The additional dosage resulted in a heightened bacteremic state.

Test Detergent Compounds—A cationic compound typically representative of the quaternary ammonium salt group was selected: *hyamine 1622* (para-diisobutyl - phenoxy - ethoxy - ethyl-dimethyl benzyl ammonium chloride); a representative anionic compound was also chosen (Tide). Phenol was included in all experimental procedures as a reference disinfectant.

Test Animals—Test mice used were white Swiss mice weighing from 17.0 to 22.0 gm. The animals were observed for a period of at least four days prior to experimentation; apparently unhealthy mice were removed. Spot cultures made of feces and tissues removed from randomly selected mice for purposes of detecting infection or carrier states yielded negative results.

Test Procedure—At the approximate time of death of the guinea pig inoculated as previously described, 4.0 ml. heart blood were aseptically withdrawn

and diluted with an equal volume of physiological saline in a tube containing glass beads. Following a 10-minute period in a mechanical shaking machine the tube was removed, and 1 ml. of the diluted blood was added to 10 ml. of a desired concentration of test disinfectant solution. Experiments were conducted at 21° C. and also at 44° C. In certain tests, an exposure temperature of 44° C. was found necessary to provide a sufficient and appreciable reduction in numbers of exposed organisms without employing higher concentrations of the disinfectant solutions.

Following an exposure period of 30 minutes, samples of disinfectant-blood mixture were withdrawn for dilution. Standard 99 ml. dilution bottles containing sterile distilled water were used routinely. The first dilutions of the disinfectant-blood mixture were made in blanks containing 10 per cent sterile evaporated milk; the milk provided extensive surface for competitive adsorption and neutralized the action of the detergent agents. Plating and mouse inoculation procedures were carried out simultaneously for each dilution. Triplicate plates were poured and a series of at least 3 mice were inoculated for each dilution using 1.0 ml. as inoculum. The medium used for plating was tryptone glucose extract agar (Difco) modified by addition of 5 gm. glucose and 10 ml. of 0.5 per cent brom-cresol-purple indicator per liter of medium. Plate counts were made after 48 hours' incubation at 37° C. Representative colonies were randomly picked and subcultured on Kligler iron agar and on Simmon citrate medium.

Controls were run to determine the initial number of organisms in the blood in each experiment; toxicity controls were also run by inoculation of mice with appropriate dilutions of disinfectant solution corresponding to those employed in the experimental procedures. Inoculated mice were observed at intervals during a period of at least two weeks. Strict precautionary measures were observed to exclude the possibility of infection transmission between individual cages of mice. Infection with *S. typhimurium* in dead mice was confirmed by culturing their heart blood and splenic tissue on Kligler iron agar. Determination of possible infection in survivor mice was also made by culturing heart blood on Kligler iron agar.

RESULTS

The data presented in Tables 1, 2, and 3 are representative of the results obtained in several separate experiments. Values of the MLD and LD_{50} in the experiments could not be accurately established since they were small and subject to some variation. Mice inoculated with a suspension yielding from 8 to 10 colonies in plate tests often showed rapid death; in other instances, inoculation with suspension yielding more colonies than 10 on a plate failed to produce death in mice. In general, however, inoculation with 10 or more organisms resulted in positive blood cultures if not in total kill. Conclusive evidence could not be found to prove or disprove any reduction in infectivity of surviving exposed organisms. In all instances, however, a dilution which yielded a completely negative plate count showed a corresponding complete lack of infection in inoculated mice. These results would seem to indicate that the theorized aggregates of exposed but surviving organisms bound as "bacteria-detergent complexes" are not detoxified and loosened after introduction into the animal body.

Control experiments conducted on the test organism revealed that the organism possessed virulence sufficient to produce infection and death in mice inoculated with small numbers. Control tests made on the test disinfectants revealed that the disinfectant agents inoculated into mice in concentrations used for the experi-

TABLE 1

Results of Intraperitoneal Injection into Mice of Dilutions of S. typhimurium-infected Blood Exposed to Disinfectants at 44° C. for 30 Minutes (Series A)

Exposure Suspension							
Diluted Blood	*Disinfectant*	*Dilutions Used*	*in vitro Results (Plate Count)*	*in vivo Results (Mouse Mortality)*	*Av. No. Days Before Death*	*Survivors with Positive Blood Cultures*	*Survivors with Negative Blood Cultures*
1.0 ml.	Saline control (10 ml.)	10-5	1380	3/3	3	—	—
		10-6	152	3/3	5	—	—
		10-7	14	3/3	4	—	—
		10-8	2	1/3*	10	0	2
		10-9	0	0/3	—	0	3
1.0 ml.	1:6000 hyamine (10 ml.)	10-3	630	3/3	2	—	—
		10-4	71	3/3	4	—	—
		10-5	8	2/3	4	1	0
		10-6	0	0/3	—	0	3
		10-7	0	0/3	—	0	3
1.0 ml.	1:300 Tide (10 ml.)	10-3	1210	3/3	5	—	—
		10-4	130	3/3	6	—	—
		10-5	12	3/3	12	—	—
		10-6	1	0/3	—	0	3
		10-7	0	0/3	—	0	3
1.0 ml.	1:150 phenol (10 ml.)	10-3	420	3/3	7	—	—
		10-4	39	3/3	6	—	—
		10-5	5	3/3	10	—	—
		10-6	0	0/3	—	0	3
		10-7	0	0/3	—	0	3

* Death possibly attributable to trauma or cause other than infection with *S. typhimurium*.

TABLE 2

Results of Intraperitoneal Injection into Mice of Dilutions of S. typhimurium-infected Blood Exposed to Disinfectants at 44° C. for 30 Minutes (Series B)

Exposure Suspension							
Diluted Blood	*Disinfectant*	*Dilutions Used*	*in vitro Results (Plate Count)*	*in vivo Results (Mouse Mortality)*	*Av. No. Days Before Death*	*Survivors with Positive Blood Cultures*	*Survivors with Negative Blood Cultures*
1.0 ml.	Saline control (10 ml.)	10-5	T.N.	6/6	4	—	—
		10-6	1635	6/6	5	—	—
		10-7	150	6/6	7	—	—
		10-8	14	5/6	10	1	0
		10-9	2	0/6	—	0	6
1.0 ml.	1:10,000 hyamine (10 ml.)	10-3	T.N.	6/6	2	—	—
		10-4	780	6/6	7	—	—
		10-5	69	6/6	9	—	—
		10-6	7	4/6	10	2	0
		10-7	0	1/6*	8	0	5
1.0 ml.	1:300 Tide (10 ml.)	10-3	T.N.	6/6	3	—	—
		10-4	1050	6/6	3	—	—
		10-5	157	6/6	5	—	—
		10-6	14	5/6	6	1	0
		10-7	4	4/6	8	2	0
1.0 ml.	1:300 phenol (10 ml.)	10-3	T.N.	6/6	3	—	—
		10-4	520	6/6	7	—	—
		10-5	62	6/6	8	—	—
		10-6	4	5/6	9	1	0
		10-7	0	0/6	—	0	6

* Death probably attributable to trauma.

TABLE 3

Results of Intraperitoneal Injection into Mice of Dilutions of S. typhimurium-infected Blood Exposed to Disinfectants at 21° C. for 30 Minutes (Series C)

Exposure Suspension							
Diluted Blood	*Disinfectant*	*Dilutions Used*	*in vitro Results (Plate Count)*	*in vivo Results (Mouse Mortality)*	*Av. No. Days Before Death*	*Survivors with Positive Blood Cultures*	*Survivors with Negative Blood Cultures*
1.0 ml.	Saline control (10 ml.)	10-5	1520	1/3	1	2	0
		10-6	168	0/3	—	3	0
		10-7	18	0/3	—	2	1
		10-8	2	0/3	—	0	3
		10-9	0	0/3	—	0	3
1.0 ml.	1:6000 hyamine (10 ml.)	10-3	T.N.	1/3	12	2	0
		10-4	1450	1/3	15	2	0
		10-5	160	0/3	—	3	0
		10-6	17	0/3	—	3	0
		10-7	2	0/3	—	0	3
1.0 ml.	1:100 Tide (10 ml.)	10-3	T.N.	1/3	19	2	0
		10-4	T.N.	1/3	12	2	0
		10-5	800	1/3	6	1	1
		10-6	85	0/3	—	1	2
		10-7	9	0/3	—	0	3
1.0 ml.	1:150 phenol (10 ml.)	10-3	540	0/3	—	3	0
		10-4	50	1/3	10	2	0
		10-5	6	0/3	—	0	3
		10-6	1	0/3	—	0	3
		10-7	0	0/3	—	0	3

mental procedures were toxic in varying degrees, but they did not prove fatal. Toxicity tests conducted by intraperitoneal injection of mice with dilutions of phenol, Tide, and hyamine corresponding to those used in the experimental series showed that phenol and Tide in concentrations exceeding 1:300 were relatively toxic, promoting immediate and violent spasms for periods of time often exceeding three hours. Hyamine proved relatively nontoxic using germicidal concentrations; no visible irritation of the peritoneal cavity or mucosa was noted.

SUMMARY

A report is made of a comparative study of an *in vitro* and an *in vivo* technic for evaluation of the disinfectant efficiency of a cationic and an anionic detergent in an attempt to determine whether survivors of an exposure to these agents displayed reduction in infectivity; whether theorized aggregates of survivors would be detoxified and "revived" following introduction into the animal body, and whether results obtained using the *in vitro* method of evaluation described would show a favorable correlation with results obtained employing the described *in vivo* method.

BIBLIOGRAPHY

1. Glassman, Harold N. Surface Active Agents and Their Application in Bacteriology. *Bact. Rev.* 12, 129, 1948.
2. Kenner, B. A., Quisno, R. A., Foster, M. J., and Gibby, I. W. Cetyl Pyridinium Chloride. II. An *in vivo* Method of Evaluation. *J. Bact.* 52, 449-451, 1946.
3. Klarmann, E. G., and Wright, E. S. An Inquiry Into the Germicidal Performance of Quaternary Ammonium Disinfectants. *Soap and Sanit. Chem.* 22, 125-135, 1946.
4. McCulloch, E. C. False Disinfection Velocity Curves Produced by Quaternary Ammonium Compounds. *Science* 105, 480-481, 1947.
5. McCulloch, E. C. The Real and the Apparent Bactericidal Efficiencies of the Quaternary Ammonium Compounds. *J. Bact.* 53, 370, 1947.
6. Migaki, Hoyo, and McCulloch, E. C. Survivor Curves of Bacteria Exposed to Surface-Active Agents. *J. Bact.* 58, 161-169, 1949.
7. Ruehle, G. L. A., and Brewer, C. M. *Methods of Testing Antiseptics and Disinfectants.* U. S. Agr. Dept. Circ. 198, 1931.
8. Weber, G. R., and Black, L. A. Laboratory Procedure for Evaluating Practical Performance of Quaternary Ammonium and Other Germicides Proposed for Sanitizing Food Utensils. *A.J.P.H.* 38, 10: 1405-1417 (Oct.), 1948.

Health Knows No Boundaries*

WILLARD L. THORP

Assistant Secretary for Economic Affairs, Department of State, Washington, D. C.

WHEN I was very young, my proverbial education taught me that if I would only eat an apple a day, it would keep the doctor away; and that if I were early to bed and early to rise, I would become healthy—as well as gain some other desirable characteristics. Of course, a person's health depends in large part on his own behavior. But no regularity of apple-eating nor early-bedding and early-rising, nor any other form of personal invigoration or precaution, is enough. Health is also a community matter, all the way from pure drinking water to protection against epidemics. Today, the community involved is the globe itself. Health is a national and an international problem with a Number One priority.

The old forms of snail's-pace transportation used to provide a kind of automatic quarantine against communicable diseases. The first ship to go around the world took three years before it returned to Seville in 1522. By 1874, the world had shrunk in time units of distance, so that Jules Verne's travelogue presented a practical 80-day itinerary for global circumnavigation. Today, flying on scheduled commercial airlines, it is possible to circle the earth in 142 hours and 45 minutes, less than six days, weather and machinery permitting. Obviously, the opportunity for exposure to air-borne, water-borne, or man-borne disease has been tremendously increased, and the need for concerted international health action is clearly apparent.

If I were to make a 142-hour trip around the world, I could develop a cold or influenza halfway on my trip, and remain in an infectious state the rest of the way. Scarlet fever, a streptococcal sore throat, typhoid fever, and diphtheria could all be picked up anywhere en route, and I could be an innocent but dangerous carrier of infection halfway around the world. I could be exposed to mumps, chickenpox, and measles in New York, and not even show evidence of the disease until after my return. Of course, public health officials are taking such steps as they can to deal with this new problem. These facts demonstrate to me that in terms of today's geography, control of disease and progress in achieving increased health is a global problem. Our own "health security" depends on measures taken halfway around the world to control disease.

The problem of communicable diseases is but one limited aspect of the field of health. A healthy people is a nation's most important and fundamental asset. This we have long since recognized at home. The massive effort that is going into research, health education, disease prevention and therapy in our own nation stems from this knowledge.

These programs undoubtedly draw much of their vitality from the humanitarian desire to reduce or eliminate pain and misery. These are ancient and direct

* Address delivered at the Thirty-second Annual Meeting of the National Health Council, Hotel Roosevelt, New York, N. Y., March 13, 1952.

enemies of every man, woman, and child. But in addition to this sympathetic consideration for the individual, there are important social and economic consequences of health or its absence which more than justify all the efforts which are being made.

Physical and mental disability impose a great economic and social burden. Sick people must be cared for and supported by someone. It has been estimated that in 1949 in the United States, we spent over $10 billions on medical and institutional care of the diseased, alone. No one can estimate the total burden on us all of physical and mental illness, nor the loss this imposes on our national creative and productive life.

Another social and economic factor related to health conditions is what Dr. C.-E. A. Winslow calls "the economic burden of premature death." Looking at the matter coldly, it is fair to say that the desirable situation is one in which the social and economic cost of bringing up the young is more than repaid by a full life of productive activity. Programs which increase survival through the productive period are obviously good social investments.

The cost of illness and of premature death are direct economic consequences of ill-health. But health cannot really be dissociated from the other factors which make up a society. It is involved in many chain reactions, which may be either constructive or destructive. Poor health means lower productivity; lower productivity means a lower standard of living; a lower standard of living means less food, less education, and poorer living conditions; these in turn mean poor health. Clearly, physical vitality and well-being are essential not only to productivity and efficiency. They contribute as well to mental alertness, active ambition and spiritual resilience, all essential in a democratic society. Good health, democracy, and social and economic progress go hand in hand.

With those considerations in mind, let us make a quick exploration of the geography of the world health scene. Today, about one-fifth of the world's population lives in economically developed areas where mortality rates are relatively low and health and sanitation conditions relatively advanced. These are the areas of greatest economic productivity and tend to be in the vanguard of economic and social progress. About another one-fifth of the world's population lives in areas fairly well advanced in the application of modern technology. About three-fifths of the world's population live in technologically backward countries. Here, the standard of living is miserably low, and bad health conditions are a major factor in this tragic situation. Let us consider for these areas the three social and economic burdens which I have already mentioned. The cost of preventable disease, which is largely responsible for low health status in underdeveloped areas, represents a colossal burden. In the Philippines in a recent year, for example, in a total population of 20 million people there were 2 million victims of malaria, with 10 thousand annual deaths, and 1,300,000 ill from tuberculosis, with 35 thousand annual deaths. This represents a tremendous economic loss from these two diseases alone.

The cost of premature death is also tremendous in these underdeveloped areas. In them, a much smaller proportion of healthy adults must support a much larger percentage of unproductive children and disabled adults. For example, in various countries of Southeast Asia and the Middle East, only about one-half the children born reach the age of 15, and only 15 per cent live to the age of 60. By contrast, in the United States, 90 per cent become adults and two-thirds are still alive at 60. In the underdeveloped areas, the chain reactions to which I referred are all clearly in evidence—poor health, low produc-

tivity, illiteracy, and poverty. All are holding back economic and social progress.

Let me give an example. In the fertile Terai district in India malaria had become so serious that an area which had once sustained 350 thousand population had been reduced to one-fifth that number. After only three years of malaria control in the Terai and neighboring areas the population had increased by over 100,000, the agricultural area under cultivation had been increased by 35,000 acres, and grain production increased by 35 per cent. In relation to a country as highly populated as India, experts have debated as to whether public health programs and efforts to reduce mortality do not accentuate economic and social problems. However, health programs such as this extend the working life of the population and the span of time during which they can serve as efficient producers. A healthy, productive farmer is always better than a sick one, and increased health contributes to increased food supply.

In 1951, the Iranian Ministry of Public Health started a campaign against malaria in an infected area near the Caspian Sea where 2,500,000 people live. Two hundred and twenty-four tons of DDT shipped from the United States as part of our Point IV program reached Iran in time last May to spray half a million dwellings. Already the incidence of the disease has been cut from 88 per cent to 35 per cent—and two more years of anti-malaria warfare will, experts believe, completely wipe out malaria and greatly improve general health conditions as well as increase productivity.

Throughout the underdeveloped areas in Africa, the Near and Middle East and South Asia, I think it would be fair to say that up to 90 per cent of the rural population is sick much of the time or only half-well. When limited human energies are concentrated on the day-to-day struggle for survival, the possibilities of economic and social progress and democratic growth are almost nil.

It is clear that sickness, poverty, and lack of education form a vicious circle, and the loss in economic terms alone resulting from these conditions is incalculable. Up until recent years the possibility of breaking this vicious circle seemed dim. Remedies for the control of preventable disease when they were available were beyond the financial means of poor countries. The peoples in these nations lived in a hopeless state of misery.

Recent discoveries in preventive medicine, such as the antibiotics and powerful new insecticides, have made it possible to control several of the most debilitating diseases at very low cost. For example, with the availability of DDT in India the cost of malaria control has been reduced to 12 cents per capita. This miraculous change from disease to health costs only the price of one bus ride in New York City.

It is easy enough to talk about the problem of health throughout the world, but the important question is what is being done and what should be done about improving health conditions. We do have a tremendous interest and concern about these other less fortunate countries. We have a humanitarian interest, but we also have a social, an economic, and a political interest. In much of the world today, economic development and political stability are interdependent. And, I need not remind you that the world today is 142 hours around.

Doing something helpful about health conditions in other countries is not a new experience for us. Up until a decade ago, nearly all of our contributions to world health were made by private organizations and institutions; and their rich experience has contributed greatly to the developing program of

international collaboration in health. For years, remarkable work has been done under difficult conditions in many of the most needy countries by medical missionaries, and by missions for relief and reconstruction such as those sent by various religious groups. This people-to-people form of service has helped not alone to improve health conditions but to exemplify the great concept of brotherhood which has been the motivating force back of the individuals who went abroad, and the widespread support given them by millions of Americans.

As another illustration of private activity, the Rockefeller Foundation since 1913 has been pioneering in an outstanding way in the international health field. It has sponsored public health demonstrations throughout the world. It has granted fellowships; organized institutes; carried on research; provided the knowledge and experience which has made far more productive the work of governments, including our own, and of the World Health Organization. Without this pioneering, we would probably be at the experimental stage of demonstrations instead of actually improving the health of millions of people. Other organizations such as the Kellogg Foundation have followed in this path, notably with fellowships.

The work of the private agencies goes back many years. Today, our government is also actively participating in the effort to improve health conditions in other countries. For over a decade the United States has been coöperating with the other American republics through the Institute of Inter-American Affairs in a broad variety of coöperative health programs. The Institute is now the operating arm of our Point IV program in Latin America. This hemispheric program has had four chief points of emphasis: (1) the development of local health services through health centers; (2) sanitation of the environment with particular emphasis on water supply, sewage disposal, and insect control; (3) the training and full-time employment of professional public health workers, and (4) the education of the public in health matters. It has concentrated on complete community health development with full-time, trained direction and active community participation. Over 1,300 professionals from Latin America in the health field have been given advanced training in the United States in public health. Some 240 local training courses have already been given at subprofessional levels. Some 2,820 distinct projects have been undertaken jointly with the health ministries of these countries since 1942. They have included the construction and operation of health centers; building and administration of hospitals; construction of water supply systems, sewage systems, and other health facilities such as nursing schools, laboratories, markets, public laundries, and so on. Out of this program improved public health has achieved the status of a national movement in many of the Latin American countries. The experience and knowledge gained there are of immeasurable value in health programs developing elsewhere in the world.

Today the United States is carrying on programs not only in our own hemisphere, but in many other parts of the world—in Near Eastern countries and on Pacific islands, in Northern Africa and in Southern Asia. Various phases of these programs have had different bases—relief, rehabilitation, reconstruction of war devastated areas, development of strategic resources, containment of communism and long-range social and economic development. Whatever the initial reason for them, all of these programs have been designed to build toward a future secured by stronger national and local health services in the countries concerned. Each has had, or is making, a major contribution to build-

ing up a permanent world-wide health structure.

Any review of world health problems and progress would be incomplete without paying tribute to the role of the World Health Organization whose 79 member nations are dedicated to "the attainment by all peoples of the highest possible level of health." Our participation in the World Health Organization represents our conviction that health security can effectively be achieved through international pooling of knowledge and skills under international direction.

The WHO during 1951 expended about $10 million on its world-wide program, including $3.5 million beyond its regular budget supplied by the Technical Assistance Program of the United Nations.

The sharing of knowledge, the training programs and fellowships, and the field operations of WHO are vital and effective weapons, mobilizing a broad range of resources for a concerted attack on disease. During the past year the World Health Assembly adopted the International Sanitary Regulations which establish a single uniform health code in the world for all forms of international travel and trade. The WHO also issued the *International Pharmacopeia* which sets uniform standards of strength and purity for a large number of drugs. Vitally important also is the WHO's role in the exchange of publications and information. Most important of all, of course, is its work directly with the many member governments, in aiding and encouraging them to move forward with public health and similar programs.

The various governments and the WHO are important instruments, but they are only instruments. They can be effective only by means of individuals. That is where you and the organizations you represent come so importantly into the picture. Certainly, a role of major importance must be played by the international professional societies, and their national affiliates. Some of these bodies cover a whole profession, such as the World Medical Association, the International Council of Nurses, and the International Dental Association. Others deal with specific diseases, such as the International Union Against Cancer, the International Leprosy Association, and the International Union Against Venereal Diseases. Still others deal with problems reflected in their names, the International Union for Child Welfare, the World Federation for Mental Health, the International Hospital Federation, and the International Association for the Prevention of Blindness. A special position is held by the League of Red Cross Societies which was formed right after World War I, to mobilize Red Cross Societies; to promote public health education; to give popular support to public health work.

All these and a number of other associations have been admitted into formal relationship with the World Health Organization. But international non-governmental organizations are still lacking in important fields such as those of malaria and other tropical diseases, environmental health, and sanitary engineering.

The private organizations can make significant and invaluable contributions to the world health program. The basic requirement is that you reduce your sensitivity to geographical boundary lines, and think of your problems in international terms. Other countries share the same problems, often in a much more serious form. Individuals in other countries are working to try and record progress. There is here a tremendous opportunity to give sympathy, encouragement and help.

There are certain things which organizations as organizations can do. They can contribute to the planning and operation of the World Health Organiza-

tion through their consultative arrangements. Furthermore, we are anxious to see coördinating committees in each country which will help to assure that there will be one integrated health program and not many local projects independently sponsored by various international agencies. If outside help is to have its full effect, it must not only aim at strengthening the National Health Service of the country, but must also receive the full support of the medical and allied professions. This can only be assured if the professional organizations are willing to sit on the coördinating committees and share the responsibilities.

There are three fundamental types of contributions which you and your organizations can make. First, is in the field of professional knowledge—to continue to seek solutions to the problems not yet solved. Second, is to actively help in the transmission of our knowledge and experience to the other less fortunate countries. Not only is this help tremendously important in providing training and hospitality to the doctors, nurses, and other health workers visiting this country, but you and your colleagues as you travel abroad for professional or personal purposes can share your store of wisdom and experience with conferees in other parts of the world, and in turn benefit by the knowledge they share with you.

Third, from your ranks will come many of the skilled people who are needed in the world health program. For many of them, this may mean a substantial personal sacrifice. I hope that you will find ways and means to encourage them, particularly to provide professional assurances that these men and women going abroad will not be handicapped professionally because of their contributions to world public health service. Moreover, they will be going, many of them, to face primitive conditions where human ingenuity must often substitute for modern equipment, and where the capacity to adjust to different languages, modes of thought and traditions is as important as the technical knowledge they bring to their work. Your organizations can assist by keeping them in touch with professional thoughts and ideas as they develop, and even in appropriate cases by contributions of needed equipment and materials.

Looking at the picture in the longer run, we must find ways and means to encourage and train personnel who are equipped for and capable of undertaking health assignments for brief or long duration outside this country. Lack of trained personnel is the most serious bottleneck slowing up the world health campaign. Even here in the United States there is a serious shortage of public health workers. At present 19 per cent of the budgeted positions for physicians in state and local health services are vacant for want of qualified personnel; for sanitary engineers there is a similar 15 per cent vacancy rate, and for graduate nurses 8 per cent.

Our needs, serious as they are, look small compared to those in underdeveloped countries. While in the United States we have one physician for a little over 700 inhabitants, most Latin American countries have from 2,000 to 10,000 inhabitants per physician; Indonesia has about 80,000 inhabitants per physician. In most of these countries the shortage of trained nurses is even more serious. Iran, for example, has around 900 trained nurses in a population of 17 million, and Brazil has about 1,300 trained nurses in a nation of 52 million.

Despite these grave needs, the job must be and is being tackled with vigor and enthusiasm. New and more economical forms of treatment, more facilities, professional and subprofessional training programs, educational efforts—these are all helping to liqui-

date some of the infectious diseases. But despite the fantastic miracles in controlling and eradicating yaws, malaria and the other plagues, tough and demanding work lies ahead. It is much easier to dust with DDT than it is to establish sanitary practices, and there are many parasites and diseases which still challenge our knowledge and our skill.

It is to be hoped that as the world campaign for public health develops, governments and private organizations together will be able to produce a real grass-root movement. A report on a Near Eastern project read as follows: "Personal hygiene was one of the first subjects in the new school and after a few days of seeing their boys and girls go in for washing their hands, faces and hair, the parents also began to adopt this new approach to health." The knowledge spread through these programs is almost as infectious as the diseases they are trying to control.

I have been discussing health, but what I have been saying has even a deeper significance. I have really been talking about true international cooperation. It is easy to talk about international coöperation, but words alone soon die. Actions are what really count. There are some important things which governments can do. There are some important things which diplomats can do. But the possibility for building real international good will depends fundamentally upon what people do. The chance contact with people from another country—the comments made, the attitudes taken, the interest or lack of interest, the personal spirit, the establishment of a common enterprise—all these are things which count. One of the most effective instruments in the process of building physical, and mental and spiritual health is the sense of sharing, of coöperation, of common responsibility which has no geographical barriers.

You and the thousands of individuals whom you represent, have dedicated your time and energy to the cause of health. Here is an opportunity to extend that dedication to the cause of international understanding. Here is an opportunity to enter into partnership with men and women throughout the free world and thus demonstrate to the world's underprivileged many, our desire to work with them for peace and good will in the world.

Role of the School Physician in Today's Schools*

C. MORLEY SELLERY, M.D., F.A.P.H.A.

Director, Health Services Branch, Los Angeles City Schools, Los Angeles, Calif.

THE school health movement is now old enough for us to have some historical perspective in regard to the role of the various professional groups which have contributed most to its development. Like all dynamic movements which have made their mark on the course of civilization, the school health program has grown and changed and adapted itself to the social, scientific, and cultural development of the times.

The school physician by virtue of his scientific medical training has filled a major role in the development of the school health program. The role which the school physician has filled has changed from decade to decade in accordance with medical advances and public health discoveries. This role has also been modified by the impact of scientific medicine upon the educational system and just as important by the effect of the educational environment and the demands and opportunities which the educational environment has presented. The changing role of the school physician might be represented by certain eras. The change from era to era has been gradual and spotty, with advances in some areas being much more rapid than in others.

COMMUNICABLE DISEASE CONTROL ERA

In the 1890's, Boston, Philadelphia, and New York first appointed school physicians in an attempt to control the communicable diseases, both minor and major, which were rampant in the schools. Those were the days when diphtheria and scarlet fever were still rampant and took huge tolls of the child population. The nuisance diseases, scabies, impetigo, ringworm, and pediculosis were widespread. School physicians were frequently required to visit three or four schools in one morning checking on children for signs of communicable diseases and excluding suspects. Some school doctors, we are told, carried on their communicable disease prevention duties by remote control, calling the school by telephone and asking the teachers to send home any children who seemed ill or who showed any sign of a communicable disease. However, even this limited service bore fruit and by 1910 there were 1,194 school doctors employed throughout the United States. The first school doctor was appointed by the Los Angeles City Board of Education in 1907. During these days other great public health advances were taking place and the more serious communicable diseases began to come under control through improved sanitation, vaccination, and immunization procedures.

MEDICAL INSPECTION ERA

As communicable disease became less of a menace, the school physicians began to give thought to other aspects of child health. They became acutely aware that most children have physical defects, and

* Presented before a Joint Session of the Dental Health, Health Officers, and School Health Sections of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., November 1, 1951.

the era of medical inspection suddenly blossomed forth. This development was undoubtedly hastened by the physical examination of the draftees of the first World War and the discovery of large numbers of physically defective young men. Furthermore, school nurses were being assigned to schools in increasing numbers and took over many of the communicable disease control responsibilities.

The medical inspection era in some regions brought school health into disrepute. In some states laws were passed that all school children must be examined annually. Very few school districts had adequate staffs of school physicians to carry out the required number of examinations and as a result, in order to conform with the law, hundreds of children were hurried past school doctors who made records on health cards of such obvious physical defects as diseased tonsils, decayed teeth, visual defects, poor nutrition, abnormal posture, obvious heart disease, and skin infections. For a number of years during this period, "medical inspection" was the term commonly used to designate the services rendered by the school physician. My own connection with the school health movement began at this time. I still remember my aversion to the word "inspection" when applied to the examination given by a school physician. Undoubtedly, many of the so-called examinations were little more than inspections. However, in most of the states annual examinations of school children were not required, and with the growth of the American School Health Association and the annual gathering together of leaders in the school health field high professional standards for the school physical examination were established.

PHYSICAL EXAMINATION ERA

Thus, in the 1930's, we had the Physical Examination Era with much emphasis on the improvement of the physical examination. At this time the role of the school physician in the early discovery of physical defects reached its height and has continued to this day as one of the important functions of the school doctors. No one will deny that the early discovery of physical defects in childhood is essential to the prevention of more serious and disabling conditions in later adult life and is important to the development of optimum health, happiness, and efficiency—provided that something is done about it!

During this decade voices began to be heard in books, pamphlets, and articles calling for evaluation of this physical examination program: "What's happening? Are we just compiling statistics? Is anything occurring as a result of the millions of physical examinations; are defects being corrected; are health habits being changed?" This questioning was a healthy trend. Some critics even went so far as to advocate discontinuing physical examinations as a waste of time. There were few, however, who took this extreme position, although many school health services were discontinued during the depression 30's because of budget limitations.

The role of the school physician was again in the process of change. We finally realized that to discover physical defects was fruitless unless at the same time we could awaken in the mind of the child or parent a desire to do something about their correction.

THE SCHOOL PHYSICIAN AS A HEALTH EDUCATOR

And so in the 1930's, we find the role of the school physician changing from being a defect-finding performance, which is finished in as short a time as possible, to making the examination an educational experience where favorable attitudes toward correction are developed and wholesome attitudes toward healthful living are promoted.

I would not detract from the value of the school nurse's follow-up in getting defects corrected. Very frequently the school nurse's efforts have resulted in rousing parents from their lethargy and by her talent in health counseling or in needling, as the occasion may demand, has obtained results.

Experience has indicated, however, that in most instances unless the school physician has made the health examination a truly convincing educational experience for the child or parent—unless he has sold himself and his message—nothing happens; diseased tonsils remain *in situ*; family physicians are not visited; dental diseases go uncorrected. To achieve positive results as shown by the child's response and to improve health habits, the school physician must take time to demonstrate his interest, his concern, his friendship—the same regard which he would show to the child of his most beloved friend or his most valued patient. He approaches the child with the multi-purpose objective of determining the health status and health needs of the child and making the examination a positive educational experience for the child and his parents, when present, so that a change in behavior will result.

Another result of this type of examination has been the acceptance of the school physician by the family as a medical adviser, not in competition with the family physician, but as an impartial health adviser who could in many instances redirect the parent and child back to the family physician for much needed medical or surgical treatment and consistent health supervision.

THE SCHOOL PHYSICIAN AS MEDICAL ADVISER

During the war years, because of shortage of school physicians, another trend became manifest which has resulted in emphasis on the school physician as a medical adviser. In most of our public health and school health departments there was a shortage of physician personnel. It became impossible to carry out established school health programs. It became impossible even to examine routinely all entering pupils without reverting to the "quickie" examination of the medical inspection era. So more and more screening inspections were turned over to the school nurse and to the classroom teacher, and the school physician saw only those children who were referred to him by the school nurse or counselor because of some suspected physical or emotional health problem.

A very helpful by-product of this situation was a concerted movement for the better health instruction of classroom teachers to improve their ability to see children as individuals and to recognize the early symptoms of disease, personality disorders, or deviations from normal growth and development. The school physicians for their part enjoyed the freedom from the more routine physical examinations and were able to devote more time to their role as medical advisers in connection with the more serious health problems of children.

So successful was the school physician in this role as school medical adviser, during this period of physician shortage, that considerable agitation has arisen to abolish the routine physical examination and to have the school physician devote all his time to his function as medical adviser. The value of this trend has been to emphasize the fact that when physician time is limited the most essential and most productive examination by the school physician is obviously the child who is especially referred because of a suspected health problem.

To abolish the routine physical examination when physician time is available would, however, be a great mistake as there are many serious physical conditions which would be missed in the preclinical stage if left until suspected

by the classroom teacher and brought to the attention of the school nurse.

MEDICAL EDUCATIONAL CONSULTANT

During the last six years, particularly, the school physician has entered upon an even more challenging role which I am calling the "medical educational consultant." This is not to imply that the other roles which have appeared and dominated the scene for a time no longer exist.

All of these eras or trends in the developing role of the school physician have had positive values which have been retained. The school physician must still be an expert in communicable disease control, a medical inspector when needed, a physical examiner of skill, a health educator always, and the schools' trusted medical adviser. As the years have passed these functions have been more critically analyzed; waste motions eliminated, and certain functions redistributed in order to conserve the limited amount of physicians' time.

Certain changes, however, have been taking place in the educational field and in society generally which are adding to the responsibilities and opportunities of the school physician.

For one thing the educators, including the classroom teacher, discovered the whole child. They discovered that there were many factors affecting learning besides the child's I. Q. and teaching methods, and, too, that physical defects of many kinds may impair educational progress and also affect classroom behavior. They learned that there were problems of physical retardation which were related to mental retardation; that many endocrine disorders were affecting behavior and mental growth, and so more and more, the classroom teacher has been looking to the school doctor for help with the classroom problems of educational and social maladjustment.

Along with the advances in the educators' understanding of the child and his growth processes and psychological development, there has developed a world-wide interest in the importance of mental health. Books and pamphlets for the lay public on adult and child psychiatry have flooded the bookstores and have been eagerly picked up. Speakers on mental hygiene are in demand everywhere. The term "psychosomatic" has become a household word and a subject of public interest and discussion. Teacher training institutions in the more advanced centers of learning have increased their requirements for teacher knowledge of child growth and development, psychology, and mental hygiene. All this current interest in psychiatry, psychology, mental hygiene, psychosomatic medicine, and allied subjects has caught the medical schools generally, and certain segments of the medical profession, somewhat off balance. Medical schools, with a few notable exceptions, have had notoriously poor and inadequate courses on psychology, growth and development of the child, and child psychiatry. Most of the courses on psychiatry have dealt largely with the psychoses. As a result of this situation, the school physician of today is faced with a new challenge. The educational administrator is looking to him for leadership and for guidance in the field of mental health and in those areas of behavior which have educational as well as medical implications.

Another development of our time is the increased interest in the handicapped child of all types, the orthopedically, the visually, the aurally handicapped, the retarded child, the child with a speech defect. The medical profession has a special contribution to make in the selection, education, and guidance of these handicapped children.

If the school physician of today is to hold the respect of educators and is to assume his new role as medical educational consultant which is being thrust

upon him with his other important duties, he must be prepared to speak the language of educators and provide leadership and guidance in these fields where medicine and education meet—child psychology and psychiatry, growth and development, parent child relationships, psychosomatic medicine, and the care and guidance of the exceptional or handicapped child of every type.

As school physicians we should ask ourselves: "Have we moved forward to meet the new challenges of the times in which we live? Which era are we in? Are we medical inspectors or medical educational consultants?"

National Science Foundation News

The National Science Foundation, from a list of about 3,000 applications, in April awarded 624 graduate fellowships in the natural sciences for the academic year, 1952–1953. Of these 569 are predoctoral, 55 are postdoctoral fellows. The largest number of awards, one-fourth of the total, were made in the biological sciences, more than a fifth each in chemistry and physics. In the first two fields the percentage of awards followed closely the distribution of Science Ph.Ds. granted in 1951. However, 11 per cent of Science Ph.Ds. were granted in physics but 22 per cent of the NSF fellowship awards were in this field.

Fellows are permitted to train at accredited nonprofit institutions of higher education in the United States or in those abroad approved by the Foundation.

Announcement and application forms about the 1953–1954 fellowships will be available about October 1, 1952.

Also in April, the Foundation made 41 research grants in the biological and physical sciences. These grants are made to institutions for periods of from one to five years. A total of 69 research grants totaling $816,000 have now been made by the Foundation. These grants were made to institutions in 26 states, the District of Columbia, and Hawaii.

The Foundation has also made a grant to the American Physiological Society for a study to determine the present status of research and education in physiology. It will include an inventory of available scientists, facilities, and an appraisal of how research in physiology relates to other fields and the national welfare. The Foundation is sponsoring this study because of the central importance of physiological research to all science and to test the value of such a survey-inventory in helping the Foundation to develop a national policy for science and research. Dr. Orr E. Reynolds, on leave from the Office of Naval Research, is executive director of the pilot phase of the study on the basis of which complete plans will be developed.

Present-day Views on School Nursing*

MARGARET A. CREE

Nursing Consultant in School Health, California State Department of Public Health, San Francisco, Calif.

THE functions of the public health nurse in schools have changed and expanded considerably since the first nurse began her work in the schools of New York City, November 7, 1902.

What influences have contributed to shifts in nursing functions in health programs for school age children? What are some of these changes? How can the desirable practices be extended?

Among recent developments which have influenced health programs and educational philosophy for school age children and modified the activities in which the nurse engages are:

1. Scientific discoveries and technological developments have produced many sociological changes in family and community life. The marriage rate rose rapidly followed by an all-time high in the birth rate as World War II got under way. During and following the war great shifts in population occurred in many parts of the globe. Developments in transportation and communication have reduced the size of the world and focused attention of leaders of education and world affairs on the necessity of changing our educational systems to prepare children to live in a world where people of diverse ideologies and cultures are neighbors a few minutes, hours, or days apart.

2. The remarkable advances in basic and applied medical research have been greater in the last decade than at any time in medical history. Chemotherapy and antibiotics have reduced specific diseases, the greatest improvement taking place in infectious diseases. Both appendicitis and rheumatic fever have shown a noticeable reduction. Diseases which caused serious epidemics in the past no longer occur. Immunization has contributed to further reduction of those diseases which can be controlled by such measures. Maternal and infant mortality have been amazingly lowered. Despite this progress, much remains to be done in protecting the health of all children.

3. Since the passage of the Social Security Act in 1935, public health services have been extended and improved. The level of community health has been raised through the application of medical science in the public health field. Radical changes have taken place in the management of communicable diseases as scientific research has added new facts about this group of diseases. Environmental sanitation, health education, and the provision of increased health facilities for diagnosis, treatment, and hospitalization have raised the level of the public's health.

4. Studies and research in child growth and development, psychology, psychiatry, and nutrition are enriching our understanding of children, their needs and behavior. Increasingly, this body of knowledge is influencing the educational and public health program. Oneness of mind and body has achieved acceptance. Health is now concerned with optimum physical, emotional, and social well-being of the individual. An appraisal of the child's health status is replacing emphasis on correction of defects.

* Presented before a Joint Session of the Dental Health, Health Officers, and School Health Sections of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., November 1, 1951.

5. Health is slowly finding its way into the curriculum of the school. (Curriculum in this instance refers to all the experiences which the child undergoes during the day.) Teachers and administrators are awakening to the significance of health to the child as he engages in the educational process. The expansion of the programs for handicapped children demonstrates the cooperative relationships between the educator and the health worker.

6. Universities and colleges are beginning to include health in the curricula for teacher education. Schools are providing some inservice education on health subjects for the teaching staffs. In some instances, arrangements are made through extension divisions of colleges and universities, so that growth credits may be obtained. Health education workshops in summer schools and teachers' institutes are showing a marked increase. All categories of persons concerned with the health of children work together, share experiences, and develop new approaches in improving health programs.

7. The importance of the teacher in the health program and of bringing her more actively into it, is taking on new meaning as a result of the procedures in school health which have been developed in recent years. This trend is toward a higher quality of service.

8. Improved methods of screening children in need of special health services are increasingly being used in schools.

a. Fewer and better medical examinations are made with the parents present, when given at school. (Parents come in the elementary and junior high school years.) Increasingly, parents are encouraged to have periodic health examinations given by their personal physician and dentist. A plan for channeling pertinent information to the physician and dentist from the school and back to the school is very much needed. Some communities have developed such a means of communication. The American Medical Association and the National Education Association have held two joint conferences in Highland Park, Ill., to point up the role of the physician in the schools.

b. The audiometer is considered a better device for detecting defective hearing than the watch or whisper test, and it is the accepted method currently used.

c. Improved vision screening technics are evolving.

d. Continuous observation of pupils' health by teachers and referral of children who show signs of deviation to health services is a means of initiating remedial care for more children at an earlier period of their lives.

9. Perhaps, the most promising development in recent years is the growth of coöperation between departments of education, health departments, and other community agencies concerned with the health of the school child. Health committees within schools and joint committees of interested agencies on national, state, and local levels are meeting periodically, working toward the improvement of health programs for school age children. The search continues for effective ways of working together.

10. Groups of educational, medical, and public health authorities have studied school health problems and the needs of school age children and published their findings and recommendations in a series of reports.

These developments, and many others not mentioned, are changing the organizational pattern and pointing up new goals to be achieved in guiding children in the growing-up process. The public health nurse works with the family, school, and community in providing for the child a favorable environment in which to grow. Within the school the nurse develops, with all members of the school staff, a close working relationship so that optimum benefits for children may be realized.

CHANGING EMPHASES IN THE FUNCTIONS OF THE NURSE IN THE HEALTH PROGRAM OF THE SCHOOL

The role of the nurse changes as the concepts of health programs change. In

the early years of health services in schools, the public health nurse worked on the fringes of the school program. She was attached to the school but not a part of it. Health was the responsibility of the doctor and the nurse. To be sure she worked intimately with the children and their families; however, she took care not to "bother" teachers unless they showed some interest. Instances of such traditional programs will continue to be found for some years. The child is our primary interest and a number of persons are concerned with him. Practically all parts of today's school health program requires participation by teachers, nurses, and physicians; and in the larger school systems, additional members of the health team, such as health coördinators, dentists, dental hygienists, psychologists, nutritionists, and perhaps others, will be found. The more complex the organization becomes, the greater is the necessity to define the functions of each person. Monograph No. 13, published by the Metropolitan Life Insurance Company, *The School Administrator, Physician and Nurse in the School Health Program,* has delineated functions for three categories of such personnel.

The public health nurse participates as a member of a group of specialized professional workers in all phases of the school health program, but her major activity is in health service. She is a member of the curriculum committee, enriching the teaching content to meet children's needs through her knowledge of individual, family, and community health. How much she can contribute in building a functional health curriculum is not always understood by the committee. However, some ingenious nurses find ways of becoming members of such a group.

The public health nurse in the school situation participates in group activities, such as health workshops and institutes. She is a member of the health council within the school and the coördinating council of the community. In this capacity she participates in policy making and program planning. In such group activities she learns much in relation to working with others, an essential characteristic for success, in the complex school community.

The trend toward coördinated planning of all health programs in the community reëmphasizes the fact that the health problems found by the nurse working among children in the schools reflects the health problems in the family, and provides a general over-all view of the status of community health. The child spends most of his day with his family and in his community and what happens to him is of vital concern to the school personnel, who are concerned with him. Combined staff education programs for school health department staffs and other community nursing agencies have been arranged.

In rural areas and small towns, where the only nurses employed in the community may be in the schools, they meet at regular intervals. Many of these nurses are working alone or with one or two others. They have few contacts with members of their own professional group and find stimulation in meeting together. Some health departments invite school nurses to their staff meetings and in several instances, schools have extended an invitation to health department nurses to meet with them. Maternal and child health, nutrition, mental health, tuberculosis, communicable diseases, rheumatic fever, dental health, and accident prevention safety programs are some of the subjects of interest to all public health nurses. The more opportunities provided for agencies to learn about the responsibilities each carries and to know each other, the better the agencies will be able to serve the interests of children.

Shifts in emphasis are occurring in nursing functions within the school. Research studies indicate that one of the

most productive activities in which the nurse engages is the conference. The planned teacher-nurse conference replaces routine health examinations. Teacher and nurse confer about all children in the class, selecting those children for examination who appear to have, or are known to have, health problems. Thus, children with health problems are followed earlier and more time is available for conferences with parents, teachers, and children. In the April, 1951, issue of the *American Journal of Public Health* is the report of a study made in New York City to determine whether adverse conditions go unrecognized when annual physical examinations are not performed. Only 22 of 232 adverse conditions observed in the examinations were unknown to the school medical service, and these were not serious.

Conferences with the parents are considered more productive than a written notice. Even the most carefully worded note precludes the interchange of thought, feeling, attitudes, and an expression of the action parents plan to take in regard to their child's health problem. A telephone conference, a visit by the parent to school, or a visit to the home by the nurse are means used for counseling with parents.

As teachers become better prepared in health education, they are assuming increased responsibilities for the health of children. Next to the parent, the teacher has the most intimate knowledge of the children. The teachers are performing some or parts of the tasks formerly done by nurses, while nurses assume broader responsibilities.

More nursing time is given to working with the teachers, demonstrating technics for screening vision, weighing and measuring children, and observation of children for signs of illness. Weighing and measuring is a means of interesting the child in his own growth and development, and screens children for referral to the nurse for a follow-up. Seldom is this task performed solely by nurses. The nurse will spend more time in counseling with teachers to help them feel secure in the part they are taking in health services, observation of children, assistance in follow-up of some of the health problems of her pupils. Nurse and teachers are making some home visits together when a health problem indicates that a joint visit may be helpful.

No longer are health rooms hazards because of the large number of children who congregate there for clearance before admission to the classroom. The observant teacher carries out this activity under the guidance of the nurse. She will refer to the health service only those children about whom she feels uncertain and wants medical or nursing consultation. If a school agrees that the teacher is in the best position to detect early signs of illness or deviations from normal, then instead of the nurse giving cursory inspections to dozens of children sent to her office each morning or by the nurse going into the classroom, she will see only those children referred by the teacher.

Often the nurse will have to assume responsibility for obtaining some medical policies for accidents and emergency illness, since many schools have either no physician or one who comes only on a part-time basis. Such policies should be approved by the local medical society in order that school personnel, nurses and teachers, have some degree of protection when they care for emergencies. The administrator should delegate one or two persons trained in first aid to be responsible, when the nurse or physician are not present. If medical policies and procedures are set up, and these in turn are well known by the faculty, the care of such cases will be greatly facilitated. The nurse is responsible for all first aid equipment and supplies. All first aid cabinets located throughout the school

should be checked at regular intervals.

The follow-up of absentees is often delegated to the nurse, largely because the majority of absences are due to illness. However, it is the school's responsibility to first ascertain the cause of absence. A policy should be decided upon with the school officials to determine why a child is absent before referring the matter to the nurse for follow-up.

The nurse's follow-up can be used to best advantage for children frequently absent, or for those who may need help in obtaining medical or other types of care. Through classroom instruction and conference with parents, both children and their parents can be encouraged to report to the school on the first day of absence.

One of the most significant contributions that the public health nurse makes is in her work with the families of school children, and a large portion of her time should be available for this work. Unless the family is recognized and utilized as the basic sociological unit for health work with children, the health program is weakened. For the child is inextricably a part of the family group. The child's health problem, which leads to a conference with the parent, may uncover others of greater significance to the child and his progress in school, than the original one which initiated the conference with the parent.

Health records are receiving increasing attention as their significance in guiding and supervising children is recognized by the entire school staff. The responsibility for keeping them is being shared with others. Heretofore, they were largely in the possession of physicians and nurses.

The recording of health data remains a problem which has no ready answer, but the type of system adopted by a school will reflect the philosophy of the health program in that school. What shall be recorded about children? Who shall have a part in it, and what that part shall be are matters to which an increasing number of schools are giving attention. The mere recording of data is of little value unless they are used. The nurse is the one member of the staff who gives the most time to health records, and she should be a member of any group in which records are considered.

The nurse working with health committees and other personnel in the school should encourage the setting up of two-way channels for the transmission of health information about children to all school personnel who work with them.

In those schools where the teacher knows something about the health status of the children in her classrooms, she is able to assist with the follow-up by keeping the nurse informed about those children whose parents have sought medical and dental care. More counseling with teachers, parents, and children is preferred to written reports.

The isolated classroom health talks, formerly a frequent activity of the nurse, are being replaced by health instruction on the part of the classroom teacher. She may invite the nurse to assume some special unit of instruction, such as some phase of community health, communicable disease, or child care. Generally, the nurse will serve as a resource person for the teacher whose responsibility health teaching is. However, the nurse may provide the teacher with health education materials or refer her to authentic sources for them.

The school administrator should look to the nurse for guidance and interpretation in the development of a school health program which functions to meet the needs of children, and the nurse must keep the administrator informed of the developments in the program. Only with his blessing should new projects be started, for the school administrator sets the stage for successful functioning of the health program.

The public health nurse's role is changing to broader responsibilities of consulting with school administrator, teachers, and other members of the school health staff. She counsels with the parents and pupils. She relates her work to that of others, and her responsibilities may differ in accordance with the kind and number of other personnel employed. She is a member of all committees which consider the health of school children. But, her greatest contribution is in the work she does with children and their families, and in performing this service, she reaches into the community and calls upon its resources as needed.

Some of the changes in nursing responsibilities which are taking place have been cited. These changes are pertinent to all nurses working in schools, irrespective of which agency employs them, schools, health departments, or others.

Time is one important factor in determining the kind of service which the nurse will render. Some nurses employed by boards of education have no more time for an individual school than some nurses who are employed by health departments. They cover large areas and have a number of schools and large pupil loads, but where time is limited there tends to be better planning with the schools for using the time available. Do we really know which system is best? Should we not concede that some studies of the two systems are needed? Perhaps we can say there is agreement at the two extremes for rural areas and large urban centers. In rural areas it is agreed that a generalized program is the most economical. Sometimes the schools pay the salary of the nurse who carries on all the public health nursing activities of the community.

We have all read and heard discussions on the pros and cons about generalized and specialized nursing service for schools. Advantages and disadvantages can be cited for both types of service. Satisfactory service has been provided under both systems. Many convincing arguments are advanced on both sides, although in a community which maintains both health and education departments, there appear to be many advantages in a joint enterprise that combines features proposed by each group. The joint efforts of the two agencies strengthens the health program for children.

Do we really know what the ratio of pupils to one nurse should be? The amount of nurse time required in each school varies with the enrollment, the general health of pupils in the school, and how much responsibility is assumed by other members of the health team. Sufficient time, though, should be allowed in each school to enable the nurse to maintain adequate records; interview pupils referred to her; consult with teachers regarding health problems of the pupils, and follow-up the pupils with handicapping conditions in order to insure that the medical, dental, and other needed services are obtained. She will have other responsibilities such as teacher meetings and school health council meetings to attend. Perhaps a few schools have a ratio of nurses to permit the completion of such activities. Some of the tasks now performed by nurses do not require her skills, and realignment of these tasks will provide more time, as will improved planning of the entire school health program.

It is an accepted principle in school administration that what goes on in the school is the responsibility of the school administrator. When schools contract for health services from another agency, that agency is responsible for planning with the school administrator the type of health program which is in accord with the philosophy of education and which is geared to the needs of the children attending the school. How nursing service shall be organized is a

decision which is made locally in relation to the legal provisions set up by the state.

SOME PROBLEMS ENCOUNTERED IN IMPROVING SCHOOL HEALTH PROGRAMS

The complexity of the educational system and the slowness with which changes can be made in large schools require the exercise of patience and knowledge of how to work with people. One of the difficulties we encounter is the problem of how to work together where persons with varied educational and professional backgrounds are members of the school health team.

Certain school health demonstrations and studies have given us clues. Some simple orderly method for working in groups is usually devised, often in the form of an organized health council. Such a group may recommend policies; consider health problems encountered in the health program, and contribute to planning of health programs. During the process, much learning may occur among the participants, and to quote a school administrator who is providing excellent leadership in the improvement of the health program in his school system: "No one ever gives up the present way of doing things until he is convinced that the suggested ones are better. No edict from the top will do it. Only learning makes the difference."

Few school administrators have had any preparation in the health field, and they know very little about the qualifications a nurse should have to function in this specialized field, beyond being a nurse.

Educational qualifications have been set up for nurses who are working in schools. But, the present preparation given to nurses is undergoing critical analysis. Considerable confusion exists among nurses serving schools in regard to the kind of preparation needed, and this confusion is understandable. Because of it, the race for degrees is on. What the nurse is prepared to do is not always clear to her; she may major in health education for a number of reasons, or if she specializes in public health nursing she does not always feel adequately prepared for school health. The School Nursing Section of the National Organization for Public Health Nursing has been actively studying the educational preparation of school nurses. It is recognized that for the nurse to carry out the functions which are outlined in Monograph No. 13—The Report of the National Conference for Coöperation in Health Education, *The School Administrator, Physician and Nurse in the School Health Program, Functions and Education,* she must have completed the basic curriculum in an accredited school of nursing and be a registered nurse in the state. In addition, she should have preparation and experience in the field of public health. Special preparation should be provided for the nurse in order for her to function effectively in the school health program. Evidence is accumulating that many of the university programs of study in public health nursing are not preparing the three out of four nurses who now work in school programs sufficiently well so that they feel a degree of competency in school health. However, the quality of the health programs is related to the preparation and qualifications of the persons who are employed to do the job.

The past ten years has seen important developments in the field of school health and some progress made in working together.

There is reason to believe that the public health nurse, in coöperation with her team mates, is making a contribution in raising the health and well-being of the nation's school children.

An Appraisal of Various Methods Employed To Analyze the Clinical Effectiveness of Caries-Inhibitory Agents*†

JOHN W. FERTIG, PH.D., F.A.P.H.A., AND
NEAL W. CHILTON, D.D.S., M.P.H.

School of Public Health and School of Dental and Oral Surgery of the Faculty of Medicine, Columbia University, New York, N. Y., and Bureau of Dental Health, New Jersey State Department of Health, Trenton, N. J.

WITHIN the past few years, many interesting discoveries have been reported relating to the inhibition of organisms associated with dental caries, or to the neutralization of the low *p*H found in dental plaques, or to some interference with the mechanism of dental caries production. In general, the investigator first notes, fortuitously or after years of searching by *in vitro* tests, that some agent appears to interfere with some phase of the initiation of dental caries. If the agent appears promising, *in vivo* studies are then often performed on such animals as the Syrian hamster or the cotton rat. If these tests are satisfactory, the investigator may then decide upon clinical testing, i.e., the determination of the effectiveness of the new agent (or technic) in human subjects.

This last step is usually the most crucial and the new agent stands or falls depending upon the results of the human clinical study. Unfortunately, clinical testing of caries-inhibitory agents is a very time-consuming and expensive procedure. Relatively large numbers of subjects are involved; methods of setting up the experiment and maintaining correct usage of the test agent or technic require much time and effort; examination procedures call for careful, standardized methods by well trained personnel.

Once sufficient evidence has been obtained to show that the agent or technic under consideration is worth submitting to extensive testing, the design of the experiment and an analysis of the resulting data are of first importance. One requisite for any clinical study on caries-inhibitory agents is to use individuals in the age groups which are prone to active caries. Dental caries is a cumulative disease; its activity, for the most part, is evidenced up to the third or fourth decade of life. The period of maximum activity occurs, however, in the first and second decades. Individuals in older age groups would not constitute a good group to study, since their period of maximal caries activity has passed. Conclusions obtained from studying such older age groups would thus be open to serious objections.

It is the purpose of this paper to examine two types of studies on the clinical effectiveness of different caries-inhibitory agents. Each of these studies was conducted by well known, reliable workers in dental research. These studies are representative of two basic experimental designs utilized for clinical testing. In our evaluation we shall not be concerned with the merits or demerits of the par-

* Presented at a Joint Session of the Dental Health and Statistics Sections of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., November 2, 1951.

† This study was partly conducted under a contract between the Office of Naval Research and Columbia University.

ticular agent in question, but shall pay attention only to the experimental designs and the methods of analyzing the data.

THE TWO-GROUP STUDY

One approach to the study of the clinical effectiveness of caries-inhibitory agents is that exemplified by the study of Zander.[1] The test group consisted of 216 children from one school. They were instructed to brush their teeth three times daily with an experimental dentifrice containing 500 Oxford units of penicillin per gram of dentifrice. The control group, consisting of 161 children from a similar school located nearby, used a nonmedicated dentifrice in the same manner. The distribution by age for the two groups of children was approximately the same, the ages ranging from 6 to 14 years. We shall confine our review of the study to that part dealing with noncarious permanent teeth present at the start of the experiment and to teeth newly erupted during the year. These teeth will be referred to as the initially "caries-free teeth." The two groups of children were comparable with respect to the number of noncarious teeth at the beginning of the experiment, as confirmed by initial examination, and also with respect to the number of newly erupted teeth. The averages of 12.18 and 11.80 initially caries-free permanent teeth per child for the treated and untreated groups, respectively, did not differ significantly.

Ideally, the method of selection should be such as to insure that all factors other than treatment are equalized among the two groups. For example, the individuals in the two groups might be chosen at random from the same school. This random selection might even be made to operate within the various age groups. Administratively, this may offer certain difficulties, however.

The distributions of newly decayed permanent teeth in the test group and in the control group at the end of the first year of the study are shown in Table 1.

TABLE 1

Distribution of Newly Decayed Permanent Teeth among 216 Children Using Penicillin Dentifrice and 161 Children Using Nonmedicated Dentifrice

Number of Newly Decayed Teeth	*Number of Children*	
	Penicillin Group	*Control Group*
0	131	70
1	50	36
2	20	23
3	10	20
4	3	5
5	1	1
6	1	3
7	—	1
8	—	2
Total (N)	216	161
Per cent of children developing new carious teeth	39	57
Average number of newly decayed teeth	0.66	1.29
Standard deviation (σ)	1.04	1.63
Standard error of average ($\sigma/\sqrt{N}$)	0.07	0.13
Standard error of difference in averages	$\sqrt{(0.07)^2 + (0.13)^2} = 0.15$	

Probably the simplest index that could be computed to compare the two groups would be an attack rate or incidence rate obtained by dividing the number of children who acquired new carious teeth during the year by the number of children in the respective group. Thus, of the 216 children in the penicillin group, 85, or 39 per cent, have developed one or more new carious teeth, while in the control group the figure is 91 out of 161, or 57 per cent. The difference of 18 per cent in the two attack rates (57 per cent–39 per cent) is statistically significant.

This method of comparing the two groups is usually not recommended, since it does not take into account the quantitative changes in dental caries, but only whether a child does or does not develop further dental caries. We are usually interested not so much in whether a greater proportion of children do or do not develop further dental caries, but in whether there is more or less dental caries in the mouths of the children using the inhibitory agent than of the children using a control technic.

An index that meets the above requirements is the average number of new teeth becoming carious in each of the two groups. It may readily be determined from Table 1 that the total number of new carious teeth is 143 for the penicillin group and 208 for the control group. Dividing by the respective number of children, 216 and 161, we obtain averages of 0.66 and 1.29 carious teeth per child. The average number of newly decayed teeth for the penicillin group is lower than for the control group by (1.29–0.66) = 0.63 decayed teeth per child. The statistical significance of this difference in averages may be determined, in the usual manner, by calculating the ratio of the difference (0.63) to its standard error (0.15). This gives a ratio of 4.2. Since this ratio exceeds the conventional critical normal curve ratio of 2 (or 2.5), we may term the difference in averages "statistically significant." Any theoretical objections to the use of the normal curve with distributions as peculiar as those in Table 1 are largely overcome by the number of children in the groups.

Because of the fact that the number of newly decayed teeth bears a relation to the initial number of caries-free teeth in the mouth, and because the average numbers of caries-free teeth in the two groups are not exactly the same, we may attain somewhat greater precision in measuring the effect of the treatment agent by utilizing this information. One way of accomplishing this is to calculate an attack rate for each individual (newly decayed teeth divided by initial number of caries-free teeth) and then to compare the average attack rates for the two groups. The distributions of individual attack rates for the two groups are given in Table 2.

The average attack rate is 5.4 per cent for the penicillin group and 11.0 per cent for the control group. The difference is 5.6 per cent. The ratio of the difference to its standard error (1.3 per cent) is 4.3, so that the difference in average attack rates is statistically significant. The fact that the ratio is only slightly different from that (4.2) obtained by a direct comparison of the average numbers of newly decayed teeth stems from several causes: the average initial number of caries-free teeth is almost the same in the two groups; the correlation between the number of newly attacked teeth and of initially caries-free teeth is small (correlation coefficient is +0.32); the assumption made in the comparison of attack rates, that the relation between newly attacked and initially caries-free teeth is one of direct proportionality, is not quite correct. At least for these data, the method of individual attack rates has no advantage over that of comparing the average numbers of attacked teeth.

A simple way of ruling out the in-

TABLE 2

Distribution of Individual Attack Rates (Newly Decayed Teeth per 100 Initially Caries-Free Teeth) for 216 Children Using Penicillin Dentifrice and 161 Children Using Nonmedicated Dentifrice

Attack Rate (Per cent)	Number of Children	
	Penicillin Group	Control Group
0	131	70
1–5	11	5
6–10	31	20
11–15	17	27
16–20	11	10
21–25	6	4
26–30	2	9
31–35	3	5
36–40	1	2
41–45	2	—
46–50	—	6
51–55	1	—
56–60	—	1
61–65	—	—
66–70	—	1
71–75	—	1
Total (N)	216	161
Average attack rate	5.4 Per cent	11.0 Per cent
Standard deviation (σ)	9.2 Per cent	14.6 Per cent
Standard error of average ($\sigma/\sqrt{N}$)	0.6 Per cent	1.1 Per cent
Standard error of difference in averages	$\sqrt{(0.6)^2 + (1.1)^2} = 1.3$ Per cent	

equalities in the average numbers of initially caries-free teeth is to express the average number of newly decayed teeth as a percentage of the average initial number. Thus, for the penicillin group we have (0.66/12.18)100, or 5.4 per cent, and for the control group (1.29/11.80)100, or 10.9 per cent. These "average" attack rates will usually be close to those obtained by averaging the individual attack rates, as they are in this case. The standard error of the difference of these average attack rates is 1.23 per cent (obtained by appropriately modifying the standard errors of the average numbers of newly decayed teeth as given in Table 1). Thus, the ratio of the difference of 5.5 per cent to its standard error is 4.5, somewhat the same as that found for the analysis of individual attack rates (4.3).

The "average" attack rates just discussed can be calculated more simply from the pooled data obtained by eliminating the distinction between individuals, and summing the initial number of caries-free teeth and the number of new carious teeth developing for each group (Table 3).

While the difference in those "average" or "pooled" attack rates properly assesses the effect of the treatment, the usual significance test for "rates" is not applicable. If such a test is performed, one obtains a standard error for the difference of 0.8 per cent and a ratio of difference to standard error of 6.8, indicating a grossly exaggerated significance. The standard error usually calculated for "rates" on such pooled data assumes that the variation of attack rates among individuals is merely random variation.

TABLE 3

Total Number of Initially Caries-Free Teeth and of Newly Decayed Teeth in 216 Children Using Penicillin Dentifrice and in 161 Children Using Nonmedicated Dentifrice

	Initially Caries-Free Teeth	*Newly Decayed Teeth*	*Per cent Newly Decayed*
Penicillin Group	2,630	143	5.4
Control Group	1,900	208	10.9
Total	4,530	351	7.7

This assumption is unwarranted. It can readily be shown for these data that the standard deviation of the individual attack rates is about 40 per cent larger than could be accounted for by random variation. In fact, if the above ratio of 6.8 is reduced by 40 per cent, one obtains a ratio of 4.8, more in keeping with the other significance tests.

The most elegant method of utilizing the information on the initial number of caries-free teeth is by a correlation technic such as the analysis of covariance. While this method assumes a linear relation between the number of newly decayed teeth and of initially caries-free teeth, it does not assume direct proportionality as in the method of attack rates. While there are numerous theoretical limitations on the use of the analysis of covariance, it probably gives a more satisfactory answer than any of the methods thus far presented. It leads to an "adjusted" difference in average number of attacked teeth for the two groups of 0.66, rather than 0.63, and a ratio of difference to standard error of 5.0, indicating greater significance than do the other methods.

The various ways of assessing the effect of the penicillin dentifrice agree in that there is a significant reduction in the amount of dental caries compared with that of a control group: from an average of 1.29 to 0.66 newly decayed teeth per child, from 11.0 per cent to 5.4 per cent in average attack rate, from 10.9 per cent to 5.4 per cent in "pooled" attack rate. By any of these approaches the treated value is about 50 per cent of the control value. Similarly, all approaches lead to the same statistical significance if one properly assesses the standard errors of the pooled attack rates.

It may at times be convenient to express the difference between the average number of newly decayed teeth for the experimental group (0.66) and for the control group (1.29) as a percentage of the average for the control group. This relative difference or reduction is (0.66/1.29)100, or 49 per cent. While this is perfectly correct, it must be borne in mind that this relative reduction, all by itself, tells us nothing about the magnitude of the two averages being compared. In fact, any two averages in the ratio of 0.66 to 1.29 will give the same relative difference, e.g., 0.22 and 0.43. Approximately the same relative reduction (49 per cent) is obtained when it is calculated from the average attack rates. Thus, the difference between the average attack rates for the experimental group (5.4 per cent) and for the control group (11.0 per cent) is 5.6 per cent. In relative terms we have (5.6 per cent/11.0 per cent)100, or 51 per cent.

It is really immaterial whether one considers the reduction in "absolute" or in "relative" terms if one understands to what base reference is made, i.e., all teeth or only attacked teeth. The situation is somewhat analogous to that of a bank depositor who receives 2 per cent interest per year on his savings account. By placing his money in a savings and

loan association, he receives 3 per cent interest. The increased amount of money the depositor receives represents only 3 per cent—2 per cent, or 1 per cent on his capital, but it represents an increase of 50 per cent in terms of the interest he would receive from the bank, i.e., $\frac{3 \text{ per cent} - 2 \text{ per cent}}{2 \text{ per cent}}$, or 50 per cent.

The use of relative reductions may be particularly misleading when two or more of them are being compared. Suppose, for example, that three groups of children were under study: Group A, a control group, has an attack rate of 10 per cent; Group B, using a dentifrice containing substance x, has an attack rate of 9 per cent; Group C, using a dentifrice containing x and y, has an attack rate of 8 per cent. The small difference between A and B of 1 per cent, and between A and C of 2 per cent may not be significant statistically. The relative difference between the attack rates of A and B is 1/10, or 10 per cent, and between A and C is 2/10, or 20 per cent, so that the small differences appear to be inflated. Someone with a fertile imagination might further point out that the relative reduction for Group C (using x any y) is twice as much as that for Group B (using only x), i.e., 20 per cent/10 per cent equals 2. This figure might be termed, perhaps, the "relative relative reduction."

THE ONE-GROUP STUDY

When the agent under investigation can be applied to individual teeth or to groups of teeth in the same mouth, the effect of individual differences in attack rates can be eliminated. In fact, each individual is made to serve both as a control and as an experimental subject. As an example of this type of investigation, we shall refer to the study of Ast, Bushel, and Chase [2] on the effect of zinc chloride and potassium ferrocyanide on dental caries development in 179 children of ages 12 to 15. One side of the mouth was treated with the solution while the other was left untreated. The recorder made the decision as to which side was to be treated so that an equal number of right and left sides were included in the treated group. It is not certain that this procedure is equivalent to a random allocation. If it were, we might expect that on the average the initial number of caries-free teeth would be the same for the treated and untreated sides. In fact, the total number of caries-free teeth was 1,347 and 1,396 for the treated and untreated sides, with averages of 7.53 and 7.80, respectively. The difference is almost significant.

If the distribution of caries-free teeth were the same for treated and untreated sides, then the effect of the treatment could be assessed properly by studying the distribution of the differences in the number of attacked teeth between the two sides (Table 4).

It can readily be deduced from Table 4 that there are 30 more attacked teeth on the untreated than on the treated side, an average number per child of 30/179, or 0.17. The test of the significance of this average difference of 0.17 differs from the test employed with Zander's data. Because individuals differ from each other in the number of teeth attacked, the number attacked on the treated side is correlated with that on the untreated side. It was in recognition of this fact that the same individual was made to serve both as control and experimental subject. The standard error of the average difference is therefore calculated directly from the distribution of differences. The ratio of the average difference of 0.17 to its standard error (0.12) is 1.4, so that the average is not statistically significant.

Because the number of attacked teeth on each side bears a relation to the original number of caries-free teeth, we should utilize the information on original number both to correct for the fact that

the treated and untreated sides differ in the average original number, and to reduce the standard error. One way of accomplishing this is to calculate an attack rate for each individual for both the treated and the untreated sides, and then to compare the average attack rates for the two sides. Because of the correlation between attack rates on the two sides, we must again resort to the distribution of individual differences in attack rates (Table 5).

TABLE 4

Distribution of Difference in Number of Newly Decayed Teeth between Untreated Side of Mouth and Side Treated with Potassium Ferrocyanide and Zinc Chloride for 179 Individuals

Difference in Number of Newly Decayed Teeth (Untreated-Treated Side)	*Number of Individuals*
−4	4
−3	4
−2	17
−1	29
0	54
1	42
2	17
3	7
4	2
5	2
6	1
Total (N)	179
Average difference in number attacked	0.17
Standard deviation (σ)	1.64
Standard error of average difference ($\sigma/\sqrt{N}$)	0.12

TABLE 5

Distribution of Difference in Attack Rates (Newly Decayed Teeth per 100 Initially Caries-Free Teeth) between Untreated and Treated Sides of Mouth for 179 Individuals

Difference in Attack Rates (Untreated-Treated)	*Number of Individuals*
−55 to −45	4
−45 to −35	4
−35 to −25	6
−25 to −15	14
−15 to − 5	26
− 5 to + 5	51
+ 5 to +15	34
+15 to +25	18
+25 to +35	17
+35 to +45	2
+45 to +55	1
+55 to +65	2
Total (N)	179
Average difference in attack rates	1.5 Per cent
Standard deviation (σ)	19.5 Per cent
Standard error of average difference ($\sigma/\sqrt{N}$)	1.5 Per cent

TABLE 6

Total Number of Initially Caries-Free Teeth and of Newly Decayed Teeth in Treated and Untreated Sides of Mouth for 179 Children

	Initially Caries-Free Teeth	*Newly Decayed Teeth*	*Per cent Newly Decayed*
Treated Sides	1,347	297	22.0
Untreated Sides	1,396	327	23.4
Total	2,743	624	22.7

It is evident from the distribution that no significance can be attached to the average reduction of 1.5 per cent. The ratio of this difference to its standard error is 1.0.

A simple way of taking into account the difference in the average number of caries-free teeth at the beginning of the experiment is to pool the data for all the individuals (Table 6).

The difference in the "pooled" attack rates (1.4 per cent) is approximately the same as the average difference in attack rates (1.5 per cent). By the conventional fourfold table method, one obtains a standard error of 1.6 per cent and a ratio of difference to standard error of 0.9. This agrees surprisingly well with the previous ratio calculated from the distribution of differences in attack rates (1.0). This agreement is produced by two compensatory errors in the calculation of the standard error. While the assumption that individuals do not differ in their attack rates would cause the standard error to be too small, the ignoring of the correlation between sides increases the standard error. Consequently, it appears that a direct analysis of the pooled data not only assesses the effect of the treatment properly, but also measures the significance properly in this particular case. Whether this is true in general we are not prepared to say. With a stronger interindividual variation of attack rates, the fourfold table test would yield significance too quickly, while with a stronger correlation between sides, not quickly enough.

As in the case of the previous study, the information on the original number of caries-free teeth could be utilized to better advantage, perhaps, by a correlation (covariance) technic.

The various means of assessing the effect of the zinc chloride and potassium ferrocyanide treatment agree in that there is no significant reduction in the amount of dental caries in the treated sides of the mouth as compared to the untreated sides of the same mouth. The reduction is 0.17 decayed teeth per child, or a reduction of 1.5 per cent in the attack rate.

CONCLUSION

The testing of the clinical effectiveness of methods which have been proposed as caries-inhibitory agents is most important in the final evaluation of their usefulness in public health and clinical practice. It is essential that the investigator set up his study in such a manner that the effect can be evaluated and that significance tests can readily be performed.

Two types of studies have been considered, the two-group study and the one-group study. In the former, the effect of the test agent can be evaluated by comparing the average number of newly decayed teeth in the two groups. A somewhat more precise comparison can usually be made by comparing the average attack rates. In the one-group study the effect of the test agent can be

evaluated in terms of the average difference in number of attacked teeth between the two sides. A somewhat more precise evaluation can usually be made in terms of the average difference in attack rates between the two sides. With either type of study the average attack rates can readily be computed from the pooled data on initially free and on attacked teeth, but the significance cannot safely be measured with these pooled data. The practice of quoting differences in average numbers of attacked teeth or of attack rates as relative reductions is correct, but may be misleading.

REFERENCES

1. Zander, H. A. Effect of a Penicillin Dentifrice on Caries Incidence in School Children. *J. Am. Dent. A.* 40:569 (May), 1950.
2. Ast, D. B., Bushel, A., and Chase, H. A Clinical Study of Caries Prophylaxis with Zinc Chloride and Potassium Ferrocyanide. *J. Am. Dent. A.* 41:437 (Oct.), 1950.

A New Library Collection at Harvard

The Richard M. Smith Library of Maternal and Child Health has been organized at the Harvard School of Public Health. Consisting of over 800 books and bound pamphlets relating to the development and organization of maternal and child health services, the collection is named in honor of Dr. Richard M. Smith, the pediatrician in the School of Public Health who organized and was the first head of the division dealing with child health.

The emphasis of the collection is on developments in the United States, particularly the child health movement in the late 19th and early 20th centuries. Dr. Smith himself has made available some of the publications as have many other individual contributors, university medical libraries, professional associations, public libraries, and the U. S. Children's Bureau. The collection includes the published documents of all five of the White House conferences, the publications of the Children's Bureau, including the complete series of annual reports, and many publications of proceedings of national and international child health and welfare conferences from 1893 to 1938.

The library wishes to complete its collection of such publications as the *Annual Reports of the American Association for the Study of Infant Mortality* and its successor organizations and monographs and other material in the child health field. It asks for contributions from those who have participated in the development of maternal and child health services and for suggestions as to possible sources of contributions of relevant material.

Miss Etheldred Abbot, who recently reorganized the library of the Perkins Institution for the Blind, is the librarian. 55 Shattuck St., Boston, Mass.

Progress in School Dental Programs*

DONALD J. GALAGAN, D.D.S., M.P.H.

Senior Dental Surgeon, Regional Dental Consultant, Division of Dental Public Health, Public Health Service, San Francisco, Calif.

IT is customary for public health organizations to schedule periodic reports on the progress made by various categorical programs. Progress reports to the American Public Health Association on dental programs have become increasingly optimistic during recent years. A paper presented to this group in 1946 recorded many encouraging advancements.[1] The optimism prevalent at that time was due in large part to new and improved health practices. Better postgraduate training was available and was being utilized by more school dentists. Higher salaries were being paid to the personnel working in school dental programs. There was a marked improvement in the quality of dental educational material. The speaker foresaw more interest in school and public dental programs by the private practitioner, and by organized dentistry, and all these things, it was felt, presaged real progress in dental health programs.

In 1949 another observer reported upon the many new developments in the field of dental research.[2] It was pointed out that such recent discoveries as the antibiotic and ammoniated dentifrices, the local application of fluoride compounds and the old, yet new, concept of postprandial toothbrushing would reduce the prevalence of dental caries. The development of community dental health committees and new health education technics, and the provision of incremental care for the school age child, all would lend themselves to improved school dental programs. In view of the interest of the American public in preventing dental diseases, inevitable progress for dental health programs was predicted in future years.

The optimism evident in these reports was not just a postwar enthusiasm. One need only review the literature to observe that a similar optimism has prevailed since the establishment of the earliest school dental programs.[3-9] Almost without exception, writers have reported progress in their communities, and have predicted that we would soon solve our dental problems if the principles inherent in their program were adopted on a broad basis.

My assignment is to report on current progress. It is obvious that our forward pace has become accelerated. Never before have we had promises of better programs in the field of dental health. Let us look at some of the areas in which we have made forward strides during recent years and, if possible, evaluate our successes.

1. There has been a significant increase in the number of school and community dental programs in the last few years. This expansion may be generally attributed to the concerted efforts of public health agencies and of organized dentistry to establish new programs. The nation-wide topical fluoride demonstration alone was responsible for developing approximately 400 new dental programs in the United States.[10] The

* Presented before a Joint Session of the American School Health Association and the Dental Health, Maternal and Child Health, and School Health Sections of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., October 30, 1951.

American Dental Association and most component state societies are now actively promoting community dental programs.[11, 12] These latter activities have been in addition to the long continuing efforts of state health departments in this direction. The number of school children covered by organized dental health programs of some type has rapidly increased since 1948.

2. There has not only been an increase in the quantity of these programs but in their quality. No longer are we satisfied with the dental program consisting solely of an annual inspection. You are familiar with this type of activity, in which the dentist records the same cavities over and over again, larger this year than last. No longer are we satisfied with programs designed solely to give relief from pain. We have come to recognize the futility of both these activities. Obviously many of our school dental programs still encompass no more than these feeble efforts. Even so, it is a sign of progress to note a growing belief that the school dental program of a service nature should embody the best of care for all those children included in the program.

We have even gone beyond the concept that a service program should just fill and extract teeth, in a routine, perfunctory manner. We have made starts in the field of preventive orthodontic programs.[13] We have recognized the fact that community health councils should be used to help school and community dental programs do a more comprehensive job.[14] We have a host of new and improved technics for handling and treating the school age child.[15-18] We know that our services have to be readily available if they are to be widely accepted. We are experimenting with new methods of bringing dental care into the school itself so that a dental visit will be as uneventful and as accepted by the school child as a routine class session.[19] We have made real progress in developing the structure and content of our dental service programs.

3. In the field of personnel, forward progress is not so clearly evident. The number of dentists graduating from schools at the present time is not adequate to meet increased demands, even though some new schools have been established since the war.[20] On the other hand, there has been a marked increase in the number of auxiliary personnel available for school programs.[21] Eight new schools of dental hygiene have been started in the last year, and existing schools have expanded their facilities 33 per cent over 1949–1950.

Even more encouraging is the fact that we are learning how to make the dentist more efficient at the chair by the increased use of auxiliary operating aids. Preliminary evidence from studies now in progress indicate that operating teams utilizing dental assistants should double the efficiency of the school dentist. Consequently, even if the number of dentists seems unlikely to be increased in the foreseeable future, the efficient use of auxiliary aides can make dental services more widely available.

4. The dental profession is rapidly changing its concept of dental health education. For many years, we insisted that dental health should be taught only by a dentist or a dental hygienist. We are satisfied now to present dental health facts to the educator, who may then pass the information on to the school child in her own manner.

There are those who question the value of dental health education aimed exclusively at the school child.[22, 23] They point out that we form our values in the family group and that the child has rather firmly entrenched ideas about dental health practices before reaching school age. This may well be. However, education also implies change. If the child has developed unsound attitudes about dental health, then the

objective of school health teaching should be to change those attitudes. Any facet of education which goes beyond the transmittal of academic information always runs the chance of creating conflict with home values. Sex education, religious education, and health education are examples of subjects which continuously meet this problem. If the educational objective is difficult to attain, which in this instance it often is, then the skilled educator should be much more capable of dealing with the subject than the dentist who is not trained in educational technics. Certainly it is a sign of progress to recognize some of the problems inherent in teaching health practices, for only then can our approach be soundly planned.

5. Many school systems are removing the candy counters and soft drink machines from their lunchrooms and hallways.[24, 25] Some question the actual benefit derived from this. They point out that the same items may usually be purchased across the street from the school. This group insists we must teach the child that these specific foodstuffs are unhealthful from a dental point of view. Only then will the school child refrain from eating them.

This is hard to dispute. Making the purchase of sweets just a little more difficult is obviously not the real answer to the problem. However, it would seem to be a measurable sign of progress toward our ultimate objective if a school becomes intellectually honest enough to practise what it teaches in its hygiene and nutrition classes, even if carbohydrate consumption by the school age child is not reduced by so much as a candy bar.

6. There are an increasing number of school systems which have seen fit to excuse pupils from classwork in order that they may obtain dental attention.[26] This device has also been questioned. It is pointed out that dentists have seldom rendered enough service for children to make such a plan really effective and that too much classroom time is lost for the benefits derived. However this question may finally be answered, it is still a sign of progress when a school administration recognizes the complex problems associated with the treatment of oral disease sufficiently to allow valuable classroom time for such purposes.

7. Perhaps the most hopeful signs of progress in the field of dental health lie in our new knowledge of preventive measures. For the first time we have reliable scientific evidence to support our proposals for large-scale group action in the field of preventive dentistry. Topical fluoride and water fluoridation programs are school and community activities which will reduce the size of the dental caries problem to a point where our restorative service programs might be used constructively.[27-31] These accomplishments have been demonstrated on a community-wide basis. Caries control methods of other types can also be utilized in school and community dental programs to help control the ravages of dental caries.[32-34]

All these endeavors signify recent progress. They indicate that we can and have made advances. They hold forth promises of better educational programs, better service programs, and better preventive programs in the future.

However, these estimates of advancement are in actuality only short-range measures of progress. Like earlier reports, they tell us of progress in methodology, of improvement in the tools with which we work. They are the necessary estimates of the progress we are making in our technics. While useful in their way, these yardsticks are not very sensitive measures of advancement toward our ultimate objective.

What must be the real and final measure of progress in the administration of any program designed to alleviate or prevent the onslaught of some specific disease or group of diseases? Consider-

ation of tuberculosis programs may provide us with comparative measurements. Short-range evaluations of progress toward solving this public health problem would undoubtedly lie in an analysis of the quality and quantity of school and community programs designed to search out unknown cases. They might also report the development of a more powerful x-ray, or a better vaccine than BCG, or an increase in the number of beds available for treatment, or more efficient use of existing facilities. These are objective and measurable signs of progress in tuberculosis control, and are comparable in many ways to our past measures of progress in the dental health field.

But in the final analysis, progress must be measured by recording morbidity and mortality data. If the number of cases and deaths from tuberculosis for the people in our society has not been reduced, then the measures designed to control this disease have not been successful, either because they were ineffective, or because they have not had widespread acceptance. Happily, those concerned with tuberculosis control can point objectively to progress. In state after state, and in our country as a whole, tuberculosis morbidity has been consistently dropping for almost half a century.[35]

In a sense, we have morbidity and mortality terms for expressing the intensity of oral pathology. It is only in recent years that we have been able to determine the epidemiological characteristics of some of the dental diseases in our school age population. We can now measure with some accuracy the prevalence and incidence of dental caries.[36, 37] We have some knowledge of the prevalence of malocclusion in child populations of selected areas.[38-40] These are the two most prevalent dental diseases in the school age child.

With the measurements we now have available to us, we are beginning to see certain definite trends in the occurrence of these two diseases in our country. Although our knowledge is very limited, the available and reliable data we do have indicate that dental caries is generally on the increase in our society.[41, 42] Our mixture of immigrant racial groups has been termed responsible for creating a problem of conflicting hereditary influences upon oral structures. Because of this, and other social factors, an increase in the prevalence of malocclusion in our children of the second and third generations has been observed.[43, 44] Admitting that our measuring devices are new, relatively crude, and subject to considerable error over the years, and with full cognizance that many dental programs have reported marked reduction in caries experience for the children subjected to the disciplines of those programs, it seems safe to say that dental caries and malocclusion are not decreasing in intensity in our nation.

Educators tell us that learning is not complete until action is taken upon the information imparted. If our new ideas and technics are not accepted by the individual, or the dental society, or the school system, then we have not succeeded. If children are not motivated by our dental health education, or if they do not accept our new and efficient services, even if available to them, we cannot achieve our objective. If the dental profession will not make use of auxiliary aides, or new preventive technics on a broad scale, then our research is of reduced value. If our communities will not budget money to conduct preventive programs, then our technical knowledge is no great asset.

It is of no help to the youngster to read the finest piece of educational material, designed to tell the effects of carbohydrate upon his teeth, if our social customs dictate that he should gather with his friends for soft drinks after school. It is of little value to the student to know that regular visits to a school

clinic might have prevented a trip to the oral surgeon to have two or three permanent teeth removed, if for some reason he did not or could not make those visits. It is meaningless to know that the addition of a trace element to the city water system could have prevented a portion of the dental caries in evidence today, if community lethargy or fragmentary opposition effectively blocks such a move.

We have made progress in recent years. We have an increased number of broadly conceived school dental programs and have come to use some of the principles of education in the dental health field. We are giving an improved service to more children with an increased number of more adequately trained personnel. We have new and extremely promising preventive measures, and now have the tools with which to accomplish most of our objectives.

And yet dental diseases do not seem to be decreasing in the school age child. Where have we failed? Why have we not reduced the ill effects of this group of diseases, which many school administrators have termed their most perplexing health problem?

Perhaps we have confused the means with the end. Progress in methodology does not necessarily mean progress in results. There is considerable difference between reports of allegedly improved activities employed in a school or community dental program and a real measurement of oral conditions. Can these activities really achieve a higher level of dental health on a broad scale, or do they just give us the satisfaction of knowing they are skillful instruments?

It is not implied that we should refrain from using such short-range measures of progress as the analyses of technics and methods in current use. They are a necessary part of our progress report. The technics developed today determine what we should accomplish tomorrow. However, our evaluation cannot stop there. When these methods have been demonstrated to be technically satisfactory, our task assumes greater and perhaps more complex proportions. Our job then is to promote the widespread application of these measures. Until we have really reduced the gap between the increment of dental diseases and their treatment, or until we have reduced their prevalence on a broad scale, our efforts have not been particularly successful.

Technics designed to combat so universal a problem are of questionable value without equally universal acceptance. If, for any reason, they are rejected by any individual or group concerned with the school dental program, they are for that reason of reduced value. We must effectively use these tools of education, of service, and of prevention if we are really to make progress in dental health. We must measure the results of our efforts in terms of their specific effect on the diseases they are designed to alleviate or prevent. Only then will the results of our advances in technical competence be measured objectively.

BIBLIOGRAPHY

1. Gruebbel, Allen O. Signs of Progress in Dental Health. *A.J.P.H.* 37:1160–1165 (Sept.), 1947.
2. Wisan, J. M. Advancements in Dental Research and Dental Health Education Affecting the School Child. *A.J.P.H.* 40:190–193 (Feb.), 1950.
3. Ebersole, W. G. The Final Figures (Marion School, Cleveland, Ohio) *Oral Hygiene* 1:577–581, 1911.
4. Smith, H. C. Carroll. Mouth Hygiene as Taught and Practiced in the Peoria Public Schools. *J. Am. Dent. A.* 9:884–891 (Oct.), 1922.
5. O'Neill, Cordelia. How Has Mouth Hygiene Progressed in the Past Twelve Years. *J. Am. Dent. A.* 11:712–719 (Aug.), 1924.
6. Sutton, Willis A. Health and Education. *J. Am. Dent. A.* 12:273–282 (Mar.), 1925.
7. Boyer, Frank S. Methods Employed in the City Schools of Allentown, Pa., To Induce Children To Take Better Care of Their Teeth. *J. Am. Dent. A.* 14:1932–1939 (Oct.), 1927.
8. Wetzel, E. C. The Shorewood Health Program. *Oral Hygiene* 29:1186–1190 (Oct.), 1939.
9. Morrey, Lon W. School Programs for Dental Health. *Pub. Health Nursing* 33:157–161 (Mar.), 1941.
10. Knutson, John W. Caries Prevention Program of the U. S. Public Health Service. *Bull. Philadelphia Co. Dent. Soc.* 15:167–173 (May), 1951.
11. The Maintown Dental Health Project. Chicago: American Dental Association, 1951.
12. Phair, W. P. Conference on Community Planning for Dental Health. *J. Am. Dent. A.* 42:439–442 (Apr.), 1951.

13. Bushel, A. C. Orthodontics: A Public Health Program. *Health News* 27:10–13 (Mar. 16), 1950.
14. Nyswander, Dorothy B. New Jersey Citizens Know What They Want. *Dent. Health* 6:15–17 (Aug.), 1946.
15. Brauer, J. C. The Development of a Pattern of Instruction. *J. Dent. Educ.* 15:241–246 (May), 1951.
16. Moore, G. R. Heredity as a Guide in Dentofacial Orthopedics. *Am. J. Orthodont. and Oral Surg.* 30:548–554 (Oct.), 1944.
17. Panzer, Milton. The Heat Produced During Cavity Instrumentation. *J. Dent. Child.* 17:33–41 (4th Quarter), 1950.
18. Markley, Miles R. Restorations of Silver Amalgam. *J. Am. Dent. A.* 43:133–146 (Aug.), 1951.
19. Crum, W. A. Richmond Research Dental Program. *J. Indiana Dent. A.* 29:4–5 (Feb.), 1950.
20. Schoeny, L. J. Dentistry, Mobilization and Manpower. *J. Am. Dent. A.* 42:548–557 (May), 1951.
21. Dental Students Register, 1950–1951. Chicago: Council on Dental Education, American Dental Association.
22. Koos, Earl Loman. How Does the Dentist Work with the Community To Develop a Community Health Education Program? Paper given at Dental Health Education Conference, Utica, N. Y. March 13–15, 1950 (Mimeo.).
23. Nyswander, Dorothy B. Community Health Councils. Why? What Kind? *Bull. Am. A. Pub. Health Dent.* 11:4–12 (Feb.), 1951.
24. *News Letter*, Council on Dental Health, A. D. A. 7:8–9 (Aug. 6), 1951.
25. National Congress of Parents and Teachers Condemns Sale of Confections in Schools. Editorial, *J. Am. Dent. A.* 43:307–308 (Sept.), 1951.
26. Education Code. State of California, 1949. Div. 8, Chap. 3, Art. 5, Sect. 16486a.
27. Knutson, J. W. Evaluation of the Use of Fluorine as a Caries Control Measure: The Effect of Topically Applied Fluorides. *J. Am. Dent. A.* 38:204–212 (Feb.), 1949.
28. Knutson, J. W., and Scholz, Grace C. The Effect of Topically Applied Fluorides on Dental Caries Experience. VII. Consolidated Report for Four Study Groups, Showing Reduction in New Decay by Individual Tooth and Tooth Surface, and Frequency Distribution of Newly Decayed Teeth in Treated and Untreated Mouth Halves. *Pub. Health Rep.* 64:1403–1410 (Nov. 11), 1950.
29. Dean, H. T., Arnold, F. A., Jr., Jay, Philip, and Knutson, J. W. Studies on Mass Control of Dental Caries Through Fluoridation of the Public Water Supply. *Pub. Health Rep.* 65:1403–1408 (Oct. 27), 1950.
30. Bull, F. A., Hardgrove, T. A., and Frisch, J. G. Methods and Costs of Water Fluoridation. *J. Am. Dent. A.* 42:29–36 (Jan.), 1951.
31. What Are We Waiting For? Editorial, *A.J.P.H.* 41:224–226 (Feb.), 1951.
32. Kerr, D. W., and Kesel, R. G. Two-Year Caries Control Study Utilizing Oral Hygiene and an Ammoniated Dentifrice. *J. Am. Dent. A.* 42:180–188 (Feb.), 1951.
33. Fosdick, L. S. The Reduction of the Incidence of Dental Caries. I. Immediate Toothbrushing With a Neutral Dentifrice. *J. Am. Dent. A.* 40: 133–143 (Feb.), 1950.
34. Zander, H. A. Effect of a Penicillin Dentifrice on Caries Incidence in School Children. *J. Am. Dent. A.* 40:569–574 (May), 1950.
35. Smillie, W. G. *Public Health Administration in the United States.* New York: MacMillan, 1949.
36. Klein, Henry, Palmer, C. E., and Knutson, J. W. Studies on Dental Caries. I. Dental Status and Dental Needs of Elementary School Children. *Pub. Health Rep.* 53:751–765 (May 13), 1938.
37. Klein, Henry, and Palmer, C. E. Studies on Dental Caries. X. A Procedure for the Recording and Statistical Processing of Dental Examination Findings. *J. Dent. Research* 19:243–256 (June), 1940.
38. Messner, C. T., Gafafer, W. M., Cady, F. C., and Dean, H. T. Dental Survey of School Children, Ages 6–14 Years, in 26 States. *Pub. Health Bull.* 226 (May), 1936.
39. Brucker, Marcu. Studies on the Incidence and Cause of Dental Defects in Children. IV. Malocclusion. *J. Dent. Research* 22:315–321 (Aug.), 1943.
40. Grace, L. G. Frequency of Occurrence of Cleft Palates and Harelips. *J. Dent. Research* 22:495–497 (Dec.), 1943.
41. Brekhus, P. J. The Deterioration of Human Teeth. *J. Am. Dent. A.* 42:424–427 (Apr.), 1951.
42. Wisan, J. M., and Chilton, N. W. Studies in Dental Public Health Administration. IV. Dental Caries Experience in New Jersey School Children. *J. Am. Dent. A.* 37:519–525 (Nov.), 1948.
43. Easlick, K. A. Oral Health Services During the Period of Primary Dentition. *Proc. 24th An. Meet. Am. Assn. Dent. Schools* 24:189–195, 1947.
44. Knutson, J. W. Oral Health Needs of Children: Personnel, Facilities and Plans for Supplying Those Needs. *J. Dent. Educ.* 15:231–235 (May), 1951.

Mortality Statistics as a Direction Finder in Home Accident Prevention*

I. JAY BRIGHTMAN, M.D., F.A.P.H.A., M.S.P.H.;
ISABEL McCAFFREY, AND LEONARD P. COOK

Assistant Commissioner for Welfare Medical Services; Senior Biostatistician; and Biostatistician, New York State Department of Health, Albany, N. Y.

THE primary concern of a public health program in home accident control is the prevention of disability and death. To reduce the incidence of any major cause of morbidity and mortality significantly, it is obviously desirable to have available sufficient data to permit a view of the total spectrum of associated factors. Those engaged in accident control programs are fortunate in that there is an established system for the reporting of the basic facts on fatal accidents.

It is true that, with infectious disease control, it was found profitable to secure, through the use of shoe-leather epidemiology, data on all types of cases from the mildest to the most severe. By gathering detailed information regarding age and sex distribution, social, cultural and economic patterns, and working and living habits among the afflicted, it was possible to trace down the precipitating and predisposing agents and take steps for their elimination.

Certainly, it would seem desirable to obtain similarly complete information on home accidents, from the smallest incident causing minor hemorrhage or sprain to the serious incident resulting in death. However, this presents numerous difficulties, and its achievement is not an absolute requirement for further advances in this field. It must be considered that there is very often no sharp differentiation between circumstances which lead to a fatal accident in one situation and to a nonfatal accident in another. The factors associated with fatal accidents may be projected to encompass the epidemiologic story for nonfatal accidents, particularly those which result in moderate to severe disability.

Actually, there is so much valuable information on our readily available death certificates that they deserve the careful consideration of health officers and all others interested in the accident prevention problem, and they should not be tossed aside on the basis that they are not representative of the total accident problem. If anything, a study of reported fatal accidents may give a more representative picture of the accident problem in a community than will an investigation of nonfatal cases. The general universality of death reporting in many states will yield data on all cases regardless of economic status, allegiance to cults, and local differences in degrees of utilization of medical, nursing, and hospital facilities.

The study of accidents may be approached from various points of view. The approach, which probably has received the most emphasis, is an analysis of the environmental factors. Most questionnaires which have been used in

* Presented as part of a Special Program on Home Accident Prevention sponsored by the Subcommittee on Accident Prevention of the Committee on Administrative Practice of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., October 31, 1951.

accident studies have emphasized this aspect. These studies have made, and are continuing to make, valuable contributions to the field of accident prevention by providing the data for education directed at the elimination of hazards. The second major approach has been a consideration of the personal factors, particularly from the psychiatric viewpoint. That some persons have a proneness to accidents is undisputed. This has been well established in industry and to a lesser extent in motor transportation. In industry it is possible to study the actual exposure of a person to accident hazards in terms of the detailed mechanics of his operations and the number of hours during which he participates in such mechanics. His accident rate may then be compared with that of others performing similar activities in the same environment. It is difficult to extend this concept of accident proneness into the home in its entirety. Accident hazards in each home will have their own separate pattern, depending upon the structure of the house; the care rendered in housekeeping and repairs, and the number and type of activities carried on by the household members, in terms of stair and ladder climbing, window washing, and the like. Therefore, it is not possible to label a person as "accident-prone" scientifically unless we are able to compare his level of exposure to accident hazards with that of others.

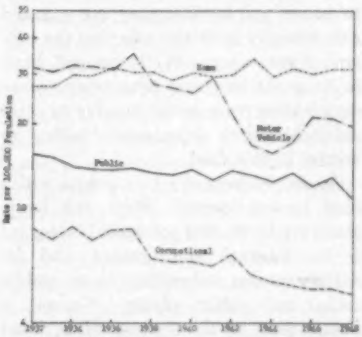
It should be stated that many persons interested in home accident prevention feel that the psychiatric element has often been overemphasized, particularly from the psychoanalytical viewpoint. With the fullest respect for the great advances made by the school of psychoanalysis, and being fully cognizant of our own lack of experience in this field, we must express some skepticism of the viewpoint that a great many accidents are wilfully planned at the subconscious level.

The present discussion covers a review of death certificate data on fatal home accidents in New York State, exclusive of New York City. Our major objective was to consider first, the personal factors which may be involved in the risk of accidents in certain groups, and second, the usefulness of existing data from this point of view.

Our study goes back to 1932, the year in which a separate tabulation of home accident deaths was started. Accidents of all types were then the fifth cause of death in upstate New York, with a rate of 85 per 100,000 population. By 1948, the rate had decreased to 67 per 100,000, but analysis indicates that this decrease was limited to declines in incidence among motor vehicle, industrial, and public-place accidents (Chart 1).

CHART 1

Death Rates from Accidents by Type, New York State, Exclusive of New York City, 1932–1948



In contrast, there has been no reduction in the death rate for home accidents. Decreases in the first three categories reflect the serious preventive efforts of many agencies during the last 20 years. The problem of motor vehicle accidents has been the definite responsibility of bureaus of motor vehicle control, the state police, and the departments of highways or public works. The constant

decline in motor deaths, excluding the drop during the war years, reflects a notable achievement on their part. Occupational accident deaths have been the concern of departments of labor, trade unions, management, and insurance companies; and the effects of well directed, specific programs have been gratifying. Likewise, public-place accidents have been the concern of many official and voluntary agencies, and while the decline is not as striking as would be desirable, the trend is in the right direction.

In speculating upon these phenomena, it is usually pointed out that few official or voluntary agencies have accepted direct responsibility for control of accidents in the home. It has been emphasized by the American Public Health Association and by the National Safety Council that home accident prevention is a logical function for health departments because public health personnel have intimate contact with members of the home, and because they are engaged in community activities affecting the welfare of the home. While we still have far to go, it has been heartening to see a gradual increase in the number of state and local health departments taking an interest in this field.

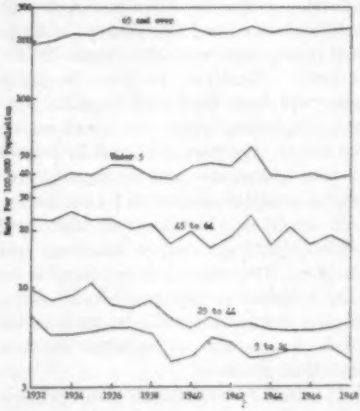
However, there are two points which must be considered. First, the home can never be as well controlled in regard to its internal environment and its activity as our industrial plants, public roads, and public places. Second, a certain part of the success of accident reduction in these first three categories has been due to the process of selection. Persons must meet certain physical requirements to obtain a driver's license, to procure certain types of employment, and even to attend certain public functions. Indeed, there are often too many restrictions placed upon the physically handicapped who are often able to do much more than they are permitted to do. No such factor of selection operates in the home. Compulsory retirement at 65 or 70 years of age and unemployment due to minor as well as major physical disabilities will give the home a greater concentration of handicapped individuals than any other place upon an exposure rate basis.

Actually, Chart 1 shows an increase of about 14 per cent in the home accident fatality rate from 1932 to 1936, but the rate has remained quite stationary since the latter year. The causes of this previous increasing trend are not clear.

The trends in the death rates from home accidents for specific ages are shown in Chart 2. It will be noted that

CHART 2

Death Rates from Home Accidents by Age, New York State, Exclusive of New York City, 1932–1948



the high rate among persons 65 years and over has been very constant throughout the years 1936–1948. They have always contributed the majority of home accidents (66 per cent in 1948), and, therefore, carry a great deal of weight in the trend for all ages. It is this age group which has been growing so rapidly at the expense of other segments of the population during the past 50 years. In 1900 it represented only 4 per cent of

the population. It now represents about 7 per cent, and it is estimated that it will include about 10 per cent of the population by 1980. Thus, the total number of fatal home accidents may be expected to increase constantly unless effective preventive measures are developed.

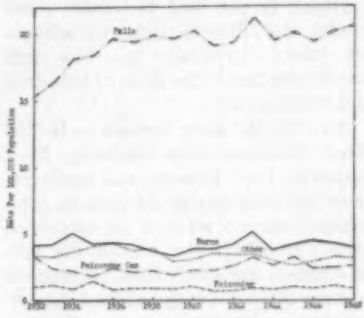
The fatal home accident rate among children less than 5 years of age, also, does not appear to have changed appreciably throughout the years of the study. Although the rate for this group (39 per 100,000 in 1948) is only about one-sixth of the rate of 231 for the group of 65 years and older, its relative importance to other causes of death is actually greater. With the considerable decreases in deaths from communicable diseases in childhood, the home accident death rate in children has assumed a leading role.

On the other hand, there have been definite declines in home accident death rates in the age groups of 5–24 years, 25–44 years, and 45–64 years. Possibly a portion of the decline among the younger persons may be accounted for by school safety programs. The decline among the two older groups may have been brought about indirectly by the school safety program's carry-over into the home, or directly by the accident prevention programs of community organizations such as parent-teacher associations. If safety educational activities of any type are to be given credit for the decline in accident death rates among persons less than 65 years, then we must conclude that the high rate maintained in the older group is due to the fact that either they have not been reached by these educational activities or that, for one reason or another, they are not affected by them.

A breakdown of the types of fatal home accidents by year is presented in Chart 3. It is obvious that falls have been the most frequent type of fatal home accident, and that the rate has followed an upward trend. In 1948, falls accounted for 67 per cent of home accident deaths in all age groups and for 87 per cent among persons 65 years of age and over. As this older age group contributes 66 per cent of all home accident fatalities, it is obvious that the single item of falls among the aged account for more than one-half (58 per cent) of the entire cause of fatal home accidents.

CHART 3

Recorded Death Rates from Home Accidents by Type, New York State, Exclusive of New York City, 1932–1948



Not only do fatal falls follow a definite pattern of age distribution, but they present an interesting and challenging picture of distribution by sex. In the age group 65 years and over, the death rate from falls in the home among women is more than double that among men. A concentrated study as to why elderly females have relatively more fatal home accidents than elderly males, and the formulation of a program directed at prevention in this very specific area, will have greater potentiality for success than a broadside approach. Also, it will still cover a major segment (approximately 45 per cent) of the total home accident mortality problem. One may speculate as to whether the elderly male, upon retiring from his occupation, spends a great deal of time safely in his rocker discussing politics, whittling or watching television, while the elderly woman must

still keep on with her household work, as during her earlier years.

In considering this question of the number of deaths from falls among the elderly, and particularly in the female sex, it would seem unlikely that older persons become more daring in their activities or more venturesome in adopting new and unfamiliar routines. If anything, people tend to become more careful and self-protective with advancing years. Certainly, this has been found to be true in the fields of industrial and motor safety.

A fall in the home appears to be different from most other accidents. Most casualties from firearms and conflagrations are attributable to persons committing some act which is not considered as a routine activity. Even the falls of children are most often attributable to some activity or compulsive behavior, which is not likely to have a useful purpose. On the other hand, the fall of an older person in the home often occurs when that person is doing a useful and routine service, in many instances one which has apparently not presented a hazard or problem for many years.

It has been well recognized that physical changes associated with age may precipitate accidents, but few specific data have been forthcoming to indicate the exact frequency and nature of this association. The secondary causes of death associated with home accidents for the year 1948 were reviewed from the viewpoint of studying this problem. For comparison, a similar tabulation was made for deaths in which cancer was designated as the primary cause.

Obviously, these data are relatively crude, because physicians vary greatly in completeness of reporting secondary causes of death. Some are quite keen about putting down all related information; whereas others feel that a statement regarding the immediate cause of death is quite sufficient.

In the preparation of these data, certain classifications of secondary causes of death were eliminated from both the accident and the cancer groups. The largest item excluded was secondary cancer, which, in many instances, probably referred to the metastasis from the cancer site listed as the primary cause of death. As the punch cards from which the data were obtained provide for only two causes of death, the listing of the metastatic cancer and other associated terminal illnesses precluded the possibility of obtaining information regarding the coexistence of a different form of chronic illness.

Death reports listing secondary pneumonia, including bronchopneumonia, were eliminated because it was felt that these were terminal events rather than predisposing causes.

Reports including secondary acute illness were also excluded. In the accident cases it was not possible to tell whether the onset of these illnesses preceded or followed the fall. Also, if a secondary acute illness were to be studied, the cancer group would not serve as a suitable control because of the longer period of time during which cancer patients are exposed to the risk of an acute illness.

Anemias were eliminated from consideration as secondary causes because, in the presence of cancer, it was felt that the vast majority were attributable to the debilitating nature of the cancer and could not be classified as an associated chronic illness.

Those instances in which the associated cause of death was stated to be a disease of a certain organ, with no information regarding chronicity, were listed in our tabulations as unspecified associated causes. They were included in the total number of cases available for study but were not tabulated as instances of secondary chronic illness.

Table 1 presents the number and relative frequency of secondary causes

TABLE 1

Secondary Causes of Death Associated with Primary Causes of Cancer and Home Accidents by Age in New York State, Exclusive of New York City, 1948

Secondary Cause	Number[1]				Per cent			
	45–64 Years		65 Years and Over		45–64 Years		65 Years and Over	
	Cancer	Home Accid.	Cancer	Home Accid.	Cancer	Home Accid.	Cancer	Home Accid.
Total	2,372	216	3,488	1,069	100.0	100.0	100.0	100.0
Chronic Illnesses	754	95	1,614	829	31.8	44.0	46.3	77.5
Heart Disease	304	29	952	491	12.8	13.4	27.3	45.9
Intracranial lesions, vascular origin	63	17	110	114	2.7	7.9	3.2	10.7
Hemorrhagic infarction	77	10	89	72	3.2	4.6	2.6	6.7
Diabetes	31	9	79	31	1.3	4.2	2.3	2.9
Chronic nephritis	11	6	68	48	0.5	2.8	1.9	4.5
Tuberculosis	14	4	13	7	0.6	1.9	0.4	0.7
Other	254	20	303	66	10.7	9.3	8.7	6.2
Unspecified as to whether chronic or acute	31	1	33	6	1.3	0.5	0.9	0.6
No secondary cause reported	1,587	120	1,841	234	66.9	55.6	52.8	21.9

[1] Exclusive of cancer, anemia, pneumonia, and other acute illnesses recorded as secondary causes of death.

associated with deaths primarily assigned to home accidents and cancer, for the age groups of 45 through 64 years, and 65 years and over. As would be expected, the chronic illnesses most often listed as associates of home accidents and cancer are heart disease, intracranial lesions of vascular origin, diabetes, nephritis, hemorrhage infarctions, and tuberculosis. In the 45–64 year group, the frequency of secondary chronic illnesses reported among persons dying of home accidents is 44 per cent compared to only 32 per cent among persons dying of cancer. This difference is accentuated in the group of persons 65 years and over, among whom 78 per cent of persons dying of home accidents have one of these chronic illnesses assigned as the secondary cause compared to 46 per cent of persons dying of cancer.

Table 2 presents a comparison of the distribution of secondary chronic illnesses among those for whom such illnesses were recorded. It is noted that, for the most part, the distributions of the different types of illnesses are similar for both the home accident and cancer

TABLE 2

Chronic Illnesses Reported as Secondary Causes of Death Associated with Primary Causes of Cancer and Home Accidents by Age in New York State, Exclusive of New York City, 1948

Chronic Illness Record as secondary cause	Number				Per cent			
	45–64 Years		65 Years and Over		45–64 Years		65 Years and Over	
	Cancer	Home Accid.	Cancer	Home Accid.	Cancer	Home Accid.	Cancer	Home Accid.
Total	754	95	1,614	829	100.0	100.0	100.0	100.0
Heart Disease	304	29	952	491	40.3	30.5	59.0	59.2
Intracranial lesion, vascular origin	63	17	110	114	8.4	17.9	6.8	13.8
Hemorrhagic infarction	77	10	89	72	10.2	10.5	5.5	8.7
Diabetes	31	9	79	31	4.1	9.5	4.9	3.7
Chronic nephritis	11	6	68	48	1.5	6.3	4.2	5.8
Tuberculosis	14	4	13	7	1.9	4.2	0.8	0.8
Other	254	20	303	66	33.7	21.1	18.8	8.0

groups in the 65 and over age group. Heart disease, for example, constitutes 59 per cent of the chronic illnesses associated with both cancer and home accidents. Intracranial lesions and hemorrhagic infarctions, however, appear to have significantly larger proportions in the home accident group. The relative frequency of intracranial lesions among primary home accident deaths with associated chronic illness was about double that in the primary cancer group, suggesting the possibility that the hemiparalysis subsequent to these lesions may play a relatively more important role as a predisposing factor to fatal home accidents than other forms of chronic disability. However, on the whole, the data indicate that chronic illness, *per se*, is more frequently encountered among persons dying of home accidents than among those dying of cancer.

Before accepting as significant the higher degree of association of chronic illnesses and fatal home accidents, it would be well to review the factors which might affect the figures in the tabulations.

First, there is a much larger proportion of females among the home accident deaths than among the cancer deaths in the age group 65 and over. As the death rate from heart disease is much lower among females than males, a smaller proportion of associated heart disease might have been expected among the primary home accident deaths than among the primary cancer deaths. However, the proportion of heart disease was much greater among the accident cases.

Second, adequacy of diagnosis of associated chronic illness should favor the cancer group. Cancer patients are ill for a long period of time and most often under medical care for a major portion of that time. Signs and symptoms of secondary chronic illness would have a better opportunity of becoming known to the attending physician. On the other hand, the home accident is an emergency and the time interval between accident and death may be nonexistent or very short. The patient may not have been under medical care despite the symptoms of chronic illness, or, if so, another physician may have been called at the time of the accident. He may sign the death certificate without having had the opportunity of learning about or discovering the presence of chronic illness. The difference in the proportions of heart disease among primary home accident and cancer deaths might be even larger if adjustments were made for these factors.

DISCUSSION

In seeking more specific leads for home accident prevention, it is important to collect as much information as possible, and then define those areas which have certain features in common. These areas can be attacked by a specific program, and have the potentiality of responding favorably to that program.

Mortality reporting on home accidents has been available to health officers and interested community groups for many years. This report emphasizes the desirability of studying the available information to understand better the problem and to develop more effective control programs.

Although our home accident fatality rates have remained high, there have been certain encouraging features during the last two decades. We have procured good information on environmental causes of accidents and have been able to incorporate corrective measures in our educational programs. The home accident death rates for the age groups from 5 to 65 years have shown downward trends which may be related to these educational programs. However, there is no evidence that our activities to date have touched the home accident problem among the older age group, except in a few cities where very intensive programs have been carried out.

Mortality statistics indicate a high incidence of accidental deaths among the older age groups and a likely association with chronic illness. It may be questionable whether these accidents should be considered as a separate entity or whether they might not be interpreted as complications of chronic illness. It has been said that "a sick person is an accident going somewhere to happen." Certainly, accident prevention must be an integral part of preventive geriatrics.

Much emphasis has been placed upon equipping the home for safety, particularly for elderly persons who are physically disabled. The importance of this cannot be underestimated. However, on a long-term basis, if home accidents are most frequent among older persons having disabilities, greater emphasis must be placed upon the prevention of these disabilities and upon the rehabilitation of those who are already afflicted. Excellent medical care to a person who has just had an intracranial vascular accident will be of little avail if, as a result of the hemiplegia, the patient dies of a fall in his home a few days or months later. Persons suffering from any form of chronic illness must be taught to make maximal use of their residual capacities. This training must be instituted as early as possible before deformities become aggravated and before bad habits become established. This calls for complete evaluation of the physical resources of the patient by his physician, assisted by consultants experienced in rehabilitation procedures.

Too often, disabilities come on insidiously as a result of a gradually developing process. Diminished hearing and vision, delayed reflexes, development of dizziness, or tremors come on gradually and may not be noticed by the patient or by those around him until they are responsible for a serious accident occurring in the pursuit of ordinary activity. This stresses the importance of periodic examination; early discovery of hitherto unknown disabilities and correction of them, or at least maximal rehabilitation of the patient.

It may appear that many of these remarks have been lifted from a talk on the problem of chronic illness. Certainly they have. It is being suggested that the problem of home accident prevention among older persons is part of the problem of chronic illness and cannot be divorced from such. If this concept is accepted, then it must further be stressed that the preventive program cannot wait until a group reaches 65 years but must be begun during the earlier years, before faulty habits become strongly entrenched and existing diseases too far advanced to allow for effective rehabilitation.

It is not to be intimated that existing mortality statistics, as presently collected, will give us all the information we need on this subject. The observations referred to in this presentation are obviously crude. Dr. Halbert Dunn and his associates have recently devised a follow-up report designed to obtain much more detailed information regarding the circumstances surrounding the fatal home accident. Also, much more information is needed regarding the nonfatal home accident, including frequency and resulting disabilities. Mortality statistics do not answer the question as to whether older persons actually have more home accidents or die more frequently following these accidents. In other words, we are not yet certain whether chronic illness predisposes to the occurrence of an accident or to a fatal termination when an accident has occurred.

Then too, it is likely that an intensive study of nonfatal cases would yield much more information regarding the association of home accidents with less severe but still serious forms of chronic illness. Mortality figures give no information regarding the frequency of associated diminution of vision and hearing, arthritis, and neuromuscular disorders causing imbalance or tremors.

These conditions are not considered as contributory to death, and thus they are not indicated on the death reports.

Unfortunately, data on nonfatal cases are difficult to obtain. They require special mechanisms for their collection, and the use of poorly spared personnel. As there is no satisfactory system of receiving reports of these accidents, cities usually attempt to have their personnel obtain histories of their occurrence during visits for other purposes. In such studies, the memory factor and changes of attitude with the passage of time will affect the data. It is true that hospitalized patients are readily available for special study, but here economic and social factors preclude the possibility of getting a representative sample of the total accident problem.

One dictionary definition of the word "accident" is, "an undesigned and unforeseen occurrence of an afflictive or unfortunate character; a mishap resulting in injury to a person or damage to a thing." It must be our objective to learn as much as we can from available data and to seek new data as necessary, so that there will be fewer incidents "undesigned and unforeseen," and the prevalence of accidents will correspondingly decrease.

April Journals Wanted

Having depleted the supply of April, 1952, *Journals* due to an unusually heavy demand for single copies, the Circulation Department would appreciate receiving from members and subscribers any copies of this issue that can be spared. They may be sent, collect, addressed to The Circulation Department, American Journal of Public Health, 1790 Broadway, New York 19, N. Y.

Clinical Application of the Theory of Accident Prevention in Childhood*

HARRY F. DIETRICH, M.D.

Division of Pediatrics, Beverly Hills Clinic, The Los Angeles Children's Hospital, and the Department of Pediatrics, University of California Medical School, Los Angeles, Calif.

THE effectiveness of any immunization program is dependent on three prerequisites:

1. Active, enlightened, and sympathetic endorsement by the medical and allied professions
2. Effective immunizing tools
3. Public acceptance

Because the ultimate practitioners of accident prevention in childhood are the parents and the public, it is essential that their awareness of the problem be enlivened by knowledge. There are unfortunately hundreds of thousands of parents who, in an almost hysterical response to various money raising campaigns, think that polio, rheumatic fever, cerebral palsy, tuberculosis, and cancer are the only imminent threats to the lives of their children. There are even larger numbers of parents who devote more time worrying about pimples than poison, bowels than burns, and diaper rashes than drowning. If we suggest that accidents are the most important single threat to the physical health of their children, parents are apt to flounder in a confusing attempt to visualize all types of accidents possible, in all children, at all ages. The substance and effect of such consideration is suggested in Figure 1; the result is invariably the same—a hopeless, "You can't expect us to think of everything!"

Before we can consider the clinical application of any theory of accident prevention in childhood, we must get parents, public agencies, and physicians dynamically interested in the problem. There are several requirements.

FIGURE 1—The impact of nonconstructive warnings about accidents can result in the above parental reaction.

We must put the importance of accidents into proper perspective. Over 12,000 children die "by accident" in the United States each year. As shown in Figure 2, accidents, the Number One Killer of children, account for more

* Presented as part of a Special Program on Home Accident Prevention sponsored by the Subcommittee on Accident Prevention of the Committee on Administrative Practice of the American Public Health Association at the Seventy-ninth Annual Meeting in San Francisco, Calif., October 31, 1951.

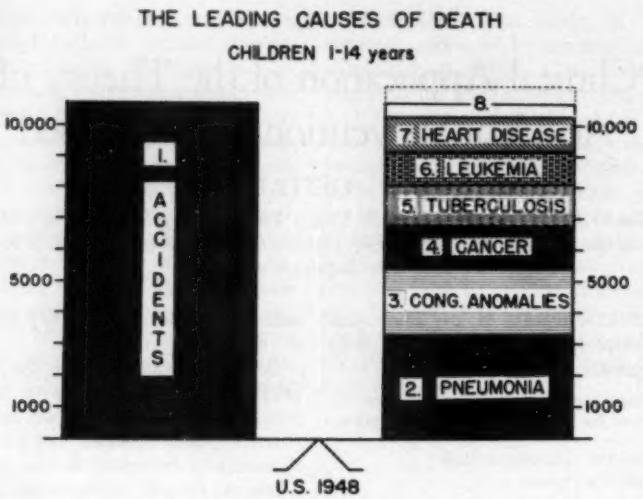


FIGURE 2—The seven most common causes of death in childhood, or what should parents be concerned about?

juvenile deaths than the next six most common causes of death *combined*. (If you had the choice of only one for your child, would you choose an immunization against polio or accidents?) By a scientifically unacceptable, but practically permissible, interpolation of the figures of Roberts and Gordon for all home accidents in Massachusetts,[1] it is suggested that from 40,000 to 50,000 children are permanently injured by accidents in the United States each year. If we, with the same type of probable inaccuracy, make use of the reports of Bucknall for Los Angeles,[2] Dropos for Kalamazoo,[3] and Roberts and Gordon for Massachusetts[4] we can estimate that between 1,800,000 and 2,800,000 childhood accidents, requiring medical aid, occur in the United States each year. And these are endemic, not epidemic morbidity figures!

We must affirm and believe that the problem of prevention is amenable to solution, and that in spite of its many facets, the variables can be encompassed in a single theory of accident prevention. During the first year of life the child must be given total protection against burning, drowning, poisoning, crushing and mangling. When at the age of five years, school and play effect a daytime separation from family protection, principal reliance must be placed on what the child has learned. The years from one to five must necessarily be devoted to replacing protection with education. Some of the methods of this imaginative substitution of education for protection have been elaborated elsewhere.[5] A graphic representation of the reciprocal relation between protection and education related to age is shown in Figure 3. Instead of allowing parental reaction to dissipate its force and direction, in thinking such as is suggested in Figure 1, we must be prepared to present the thesis that safe behavior can be developed in an orderly, step by step fashion. We do not, when he is three months of age, despair of ever teaching a boy algebra;

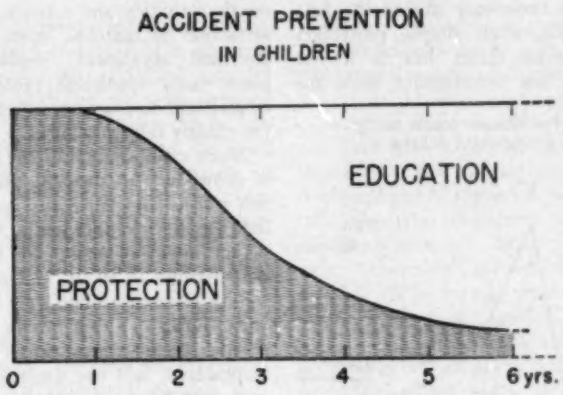


FIGURE 3—Illustrates the reciprocal relation between protection and education related to age that is the theory of accident prevention.[6a]

neither should we at that same age be overwhelmed with the thought of teaching him the safe use of matches, how to climb mountains, aquatic safety, or the proper use of firearms. Our protective devices and educational efforts must be appropriate for the child's age, sex, developmental achievements, and opportunities. Viewed in such fractional components, accident prevention in childhood becomes both feasible and fascinating. The logical counterpart to the confusion indicated in Figure 1 is shown in Figure 4.

What are the hazards to which reference is made? What are the grave dangers that threaten our children? The specific threats to safety will vary, not only with the age and sex of the child, but with the type of community, the economic level of the family, the common sense of the parents, the geography of the environs, the type of housing, the season of the year, and the activities of local groups (PTA, Safety Council, service clubs, etc.) in eliminating specific local hazards. It is imperative that physicians and public health workers acquaint themselves with such local hazards, and relate community and family accident prevention thinking to them. In general, the types of serious accidents are relatively few; the great majority of lethal accidents are included in this brief list: burning, drowning, poisoning, mangling (machinery), and automotive mayhem.

ACCIDENT PREVENTION
CONSIDER FOR AGE & SEX:
A. Childs Interests
B. Consequent Hazards
1. Protection needed
2. Education needed

FIGURE 4—A logical and nonconfusing approach to the prevention of accidents in childhood.

While the tabulation is for the entire United States, Figure 5 will suggest examples of how the age factor alone should direct our thinking and efforts. It may not be surprising that lethal falls

occur most commonly during the first year of life when simple protection would prevent them; but is it not astounding how unimportant, from the

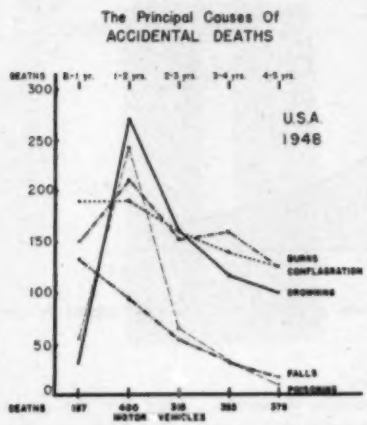


FIGURE 5—The commonest types of fatal accidents to children from birth to five years.

standpoint of incidence, they soon become? Simple appreciation of the child's growing curiosity and extending radius of action would dictate absolute protective measures to prevent access to poisons in the one to three year age period. Because that physical denial cannot long be maintained, protection must be augmented by educational efforts.

Deaths from conflagration decrease slowly as the child becomes old enough to get himself out of the burning house, and is perhaps left alone less frequently. Deaths from other burns and scalds very roughly follow a similar age incidence. But nowhere in the accident problem in childhood is the mortality rate such an inadequate index of the permanent physical, emotional, and financial damage done as in the field of burns. The studies of Colebrook [6] indicate the need for less inflammable dwellings and dresses. However, an awareness of a girl's desire to imitate her mother's domestic activities, and a boy's irresistible attraction to matches, open fires, and electrical equipment, should suggest more easily applicable protective and educational measures designed to reduce the ghastly toll from burns.

Much could be said of the prevention of drowning; for these purposes a little will suffice. A glance at Figure 5 must indicate that children one to three years of age have no respect for the deadly potentialities of water, and must therefore be given protection from it. Apparently during the first one or two years of life the virtues of water are overemphasized, and the unpleasant effects and possibilities are ignored in the child's education. When not protected from it, the one to three year old child will confidently step into six feet of this, then, lethal fluid.

It is not within the province of the present discussion to spell out the specific protective and educational efforts that must be instituted for the individual child for each principal accident hazard. However, a most cursory glance at Figure 5, or a comparably executed chart of local accident morbidity, will indicate the need for considering age when attempting to counsel on accident prevention in childhood. When the factors of age and sex are considered together, the problem of accident prevention for a specific child is still further simplified. Most basically, however, it must be realized that the pattern of safe behavior, like most other basic behavior, is largely shaped before the age of five.

With the foregoing in mind, it should be profitable to consider the clinical application of the theory of accident prevention in childhood. One additional clarification must be effected. If we consider accident prevention in the terms of any other immunization procedure, we must acknowledge that *protection* affords only passive immunity. As such it is effective for very limited periods of time if it is supplied in adequate

dosage. *Education* provides active immunity against accidents; it is relatively slow in achieving clinically effective titers, and must be given in repeated booster doses. The analogy can be carried one step further; when the child has had the basic five year course of increasing educational doses of "polyvalent anti-accident vaccine," subsequent administration of the same antigens will evoke an "anti-accident response" accelerated in rate of appearance and titer.

It is obviously impractical to attempt to outline each protective and every educational effort against all possible accidents, in either sex, at any age. Without attempting to be all-inclusive, the following may be considered a broad outline of an immunization schedule against accidents.

It would seem to be undesirable to add to the almost unlimited worries of the mother of a new-born infant by bringing up the accident problem in this period of adjustment. It is perhaps more germane to our long-range plans to attempt to reassure her about the ordinary and unnecessary fears of new mothers. More specifically, I believe we can legitimately allay her fruitless terrors about smothering[7] and the thymic myth.[8] If we can further convince her of the physiologic cause and self-limited course of miliaria, umbilical hernias, and variations in stool consistency, we can perhaps give her enough time and composure to enjoy her infant. Only then have we earned the right to remind her that no one knows when the baby will first turn over, and therefore, it should never be left where such a developmental triumph would permit it to fall.

We might wisely go one step further and suggest that no infant needs a harness or restraining sheet; we could in all honesty reinforce this suggestion with the assurance that the worst that would happen to a well infant crawling under the covers, would be a muffling of his cry. If instead, he crawled out of the covers and became uncomfortably cold, the cry would simply be amplified.

At about three months of age, when our first immunizations against diphtheria, pertussis, and tetanus are given, it is pertinent to suggest to mothers that only *they* can immunize their babies against accidents.[9] Reassurance that only "protection" is needed for many months, will be happily received. "Don't drop, crush, burn, poison, or mangle your baby" seems simple enough to be acceptable. As an aid to providing such protection, advice on the use and virtues of the play pen should be given at this time.

When it is time, at five to six months of age, for the infant to sit in some type of device while being fed, we have another opportunity to offer accident prevention advice in a nonterrorizing manner. If a high chair is to be used, certain inherent hazards must be pointed out, and guarded against. Even if the more desirable "seat in a table" type of equipment (Baby-Tenda, Baby Butler, etc.) is used, parents should be warned of the possibility of the baby having hot substances spilled on it. Such counseling is not only innately valuable, but it gradually convinces the parents of the doctor's sincere and continuing concern over the accident problem, and stimulates the parents' willingness to accept the increasing responsibility of their role in the prevention of accidents.

At about nine or ten months of age it is advantageous to remind parents that, while the infant is reveling in increasing powers of locomotion and reach, some physical restraint is necessary and will not forever warp his adventurous spirit. For many months to come the play pen, the crib, a stripped room, or a carefully policed enclosed yard are the only places where the infant can safely be allowed unsupervised

freedom of action. At about this same time, when most infants are actively resisting the prone position necessary for the many daily changes of diapers, it seems reasonable to suggest that the issue provides a sound cause for the introduction of the first mild, consistent, logical discipline. The safety of the child is threatened by his actions! The increasing strength and agility of the infant can make this frequently repeated daily task a dangerous one, unless the child is taught to accept it quietly as inevitable. Here also is the time to suggest to the mother that during the first two or three years of life, discipline should probably concern itself only with acts that threaten the child's safety. Perhaps this is the moment to suggest that both discipline and frustration, if logically engendered and frugally employed by loving parents, are indispensable in preparing the child for emotional maturity in our culture. At this early age, such a thought should be given to parents, not as a slap in the face, but as a reassurance. It is a way of letting them know that while the major problems of the next few years may not be physical, they have a counselor who is both aware and interested in those non-organic problems. While we physicians must be prepared to admit reluctantly that Kleenex is still the best treatment for a cold, we should be eagerly ready to give prophylactic advice on accidents and attitudes.

When the infant is one year of age the physician must assume that he will not see the child at such frequent or regular intervals as he has in the past. It is highly desirable that the doctor anticipate the usual parental worries for the one to two year age period; in giving anticipatory explanations and reassurance he can free the parents' minds and minutes to think about accident prevention. Every moment spent by parents worrying about the physiologic decrease in appetite, the early peculiarities of walking, the inevitable increase in minor respiratory infections, the superficial success of a neighbor in too early bladder training—every one of these moments wasted worrying about normal or unimportant things will increase the likelihood of accident to the child. At this time the physician should point out that the infant's expanding access to the physical world will require increased protection against all of the serious accidents (Figure 5), but he can assure parents that they need not yet embark on formidable educational projects. It is worth stressing, however, that at this age, parents should not rob the infant of the educational value of his minor mishaps. If instead of rewarding tears with kisses and blood with candy, parents objectively point out the cause and effect relationship of simple injuries, the infant's anti-accident titer will rise instead of fall.

At 16–20 months of age there are many simple educational devices that can further stimulate active immunity. The runabout child must gain some concept of heat, pain, gravity and non-edibility. He should have sufficient experience (staged if necessary) to learn that water, in large amounts, is not pleasant in the respiratory passage. From the standpoint of passive immunity there must be physical, or effective disciplinary barriers, to flames, streets, poisons, electricity, machinery and pools.

At two years of age when a booster DPT is usually given, it can profitably be pointed out to parents how great their reliance on education in accident prevention will soon be. While every reasonable effort must be made to interdict the serious accident threats by protection, most children of two or two and a half years can reach every cabinet in the house, and by door or window can gain access to the driveway and street. Here perhaps is the moment to suggest that time spent on manners and mummery, cleanliness and curls, and bowels and

bladder might better be spent on education in safe behavior. It is not that I object to pretty, clean children, well mannered in eating, eliminating, and entertaining, it is only that I do not like to see them dead of "accident."

Three years to go! Just 36 months until school and most play will remove them from the protective devices that parental scrutiny establishes. These are the months that must be spent in the stimulating task of helping children to learn how to do, more effectively and safely, all the things they want to do. Properly inspired and applied, this aspect of accident prevention gives children more opportunity and privilege, and more self-assurance in pursuing their interests. Secure in the knowledge that their parents are sincerely interested in their safety (self-preservation) and self-assured in their own capabilities, these are happy, secure, and self-confident children. Conversely, if accident prevention means only a day-long succession of annoyed and annoying yammering yells by the parents—"Get down" "Be careful" "Don't do that!" "You fool!" —the results will be either timidity or rebellion, or the protective development of a "deaf ear."

The immunization against accidents is far from complete at five years, but if basic immunity has been achieved, future passive immunization (as by law or family order) will be accepted, and subsequent active educational suggestions will be eagerly received and intelligently applied. And each educational booster dose will more rapidly and effectively raise the child's titer of anti-accident antibody.

SUMMARY

1. Accidents are the Number One Killer and crippler of children.

2. If attempts at the prevention of childhood accidents are related to the child's age, sex, and interests, and are sequentially considered year by year, it is not an insoluble problem with too many variables.

3. A theory of accident prevention that embraces a reciprocal relation between *protection* and *education* related to age is clinically applicable.

4. The application of such a theory may logically be looked upon as an immunization. Protective devices are then analogous to passive immunization. They represent expedients against serious temporary, or unusually subtle hazards. The educational efforts, in contrast, must be likened to active immunization. With each different antigenic response, and frequently synergistically, the human animal is better able to cope with the various accident threats. Continued and more sophisticated educational efforts can be likened to booster doses.

REFERENCES

1. Roberts, H. L., and Gordon, J. E. Home Accidents in Massachusetts. *New England J. Med.* 241:435–441 (Sept. 22), 1949.
2. Bucknall, Nathalie. Home Accident Prevention, *A.J.P.H.* 41:959–962 (Aug.), 1951.
3. Prothro, W. B. Home Accident Prevention, *A.J.P.H.* 41:954–958 (Aug.), 1951.
4. Roberts, H. L., and Gordon, J. E. *loc. cit.*
5. a. Dietrich, H. F. Accidents, Childhood's Greatest Physical Threat, Are Preventable. *J.A.M.A.* 144: 1175–1179 (Dec. 2), 1950.
   b. Dietrich, H. F. A Practical Approach to Accident Prevention. *Crippled Child* 30:4–6 (Feb.), 1951.
6. Colebrook, L. The Prevention of Burning Accidents in England and America. *Bull. New York Acad. Med.* 27:425–438 (July), 1951.
7. Bowden, K. Sudden Death or Alleged Accidental Suffocation. *M. J. Australia* 1:65–72 (Jan. 21), 1950.
8. Moss, A. J., and Litman, N. M. The Thymus Gland. *Ann. West. Med. & Surg.* 3:357–359 (Oct.), 1949.
9. Press, E. The Accident Problem. *J.A.M.A.* 135: 824–827 (Nov. 29), 1947.

American Journal of Public Health
and THE NATION'S HEALTH
Official Monthly Publication of the American Public Health Association, Inc.
Volume 42 July, 1952 Number 7

C.-E. A. Winslow, Dr.P.H., *Editor*
Reginald M. Atwater, M.D., *Managing Editor*

Editorial Board

Mark D. Hollis, C.E.
Ruth W. Hubbard, R.N.
Raymond S. Patterson, Ph.D.
John D. Porterfield, M.D.
George Rosen, M.D.
Howard J. Shaughnessy, Ph.D.
C.-E. A. Winslow, Dr.P.H.
Reginald M. Atwater, M.D., *Chairman*

Staff

Willimina Rayne Walsh
Frances Toobock
Lydia Gari

SOME IMPRESSIONS OF THE FIFTH WORLD HEALTH ASSEMBLY

THE Fifth World Health Assembly held at Geneva in May marked a distinct step forward in the vital task of building a strong central organization to inspire and coördinate the fourscore national health services of the globe. Three new states were admitted to membership, Lybia, Morocco, and Tunisia, bringing the grand total up to 82; and—except for ten iron curtain countries—nearly all of them were represented at Geneva. Dr. J. Salcedo of the Philippines was chosen to succeed our own Dr. Leonard A. Scheele as president.

The Secretariat, under the leadership of Dr. Brock Chisholm, presented a report of inspiring progress; and the major tasks of the Assembly, in formulating policy and program and in insuring sound administrative and financial procedure, were accomplished with efficiency and in a spirit of harmony and friendliness.

Of the six regional organizations, five are in good working order. These divisions serve respectively the Americas (the Pan American Sanitary Bureau), Europe, Africa, Southeast Asia, and the Western Pacific and are more and more assuming responsibility for activities in their respective areas. The sixth, the Mediterranean region, is operating effectively, with Sir Ali Shousha Pasha as its executive, but has not yet been able to hold formal regional meetings, since Israel insists on being included in this region (where, of course, it logically belongs), while the Arab States refuse to admit Israelis to meetings in their territories. The Assembly was unable to solve this problem but discussed it with reasonably good temper and left it in the hands of the Executive Board for the coming year—a temporary expedient due to the statesmanship of Sir Arcot Mudaliar, the distinguished leader of the Indian delegation.

The most critical issue before the Assembly arose in discussion of what might seem a quite harmless topic, the social and economic problems which form a background for the public health program. This Assembly, for the first time, included an evening public session, at which two addresses were delivered on this topic. One of these addresses, by a teacher of public health, took a generally

optimistic view of the possibilities of accomplishing both economic and health progress in underdeveloped areas; the other, Professor Gunnar Myrdal, a Swedish economist, emphasized the difficulties in the way, although his estimate that the allotment of one-tenth of the money now being spent on armaments on both sides of the iron curtain would set the whole world on an upward cycle of recovery, suggests that the difficulties in the way are not economically insurmountable. Both speakers however, recognized the grave problem of over-population in certain countries and the need, in such countries, of a policy of birth control. This set off the fireworks: Three resolutions were introduced, two calling for investigation and report on population pressures and population control and one definitely eliminating any further consideration of the whole question on the part of WHO.

The discussion was moderate in tone but carried implications of a very serious nature. Finally, the delegations from Ceylon and the United States urged as a compromise that all three resolutions be withdrawn and this end was actually attained. It is not always easy for Americans to understand that the simple technic of taking a vote and letting the majority rule cannot be applied as between sovereign states in which deep-seated political and religious convictions are involved; and we may well be proud of the leadership of our delegate, Dr. F. J. Brady, at this critical point. So successful was his intervention that a resolution was introduced by four countries (including one country strongly pro-birth-control and one strongly anti-birth-control) providing for future study and discussion of the general economic costs and values of preventive medicine in the future and for coöperation with UNESCO and the UN organizations in such studies. Birth control is not specifically mentioned but will no doubt not be stressed; and this seems wise. The writer happens to be a believer in the necessity for limitation of population increase in many areas; but birth control is not the most important element in the health program of the future and can be left to the consideration of individual nations without jeopardizing the future of the vast areas of public health in which full coöperation of all peoples can at present be secured.

Finally, special note should be taken of the outstandingly successful results of the Technical Discussions at this Assembly. The first three Assemblies devoted their attention wholly to the routine questions of policy, program, administration, and finance. Last year two days were devoted to Technical Discussions on the training of personnel, in which our president, Dr. Gaylord Anderson, presided over one group. This year the Technical Discussions were devoted to the problems of health administration in local areas. Five groups were organized, each including fifteen or twenty countries of widely varying health status, for parallel discussions, one of these groups being ably chaired by Dr. E. G. McGavran, dean of the School of Public Health at Chapel Hill. The results of the five groups were summarized and presented to the whole assembly in a masterly report by Professor James Mackintosh, head of the London School of Hygiene. It covered the definition and organization of a local area, its relation to state and national health authorities, the role of the health survey (for research, for planning and for evaluation), the function of the health center, the types of personnel required, the relations between preventive and curative services, and the urgent need for citizen participation. These Technical Discussions proved so successful that they will no doubt be included in future Assemblies, which should more and more become occasions, not only for the administration of the WHO itself, but for coöperative group thinking and coöperative group planning for the advancing program of health service in all the nations of the world.

THE JOB OF A HEALTH OFFICER

A HIGHLIGHT of the spring meeting of our Committee on Professional Education was a discussion of the basic philosophy underlying the difficult tasks of training public health personnel—and, of what seems at the moment an even more difficult task—of obtaining the number and quality of trainees upon which the future of the public health movement must depend. It is estimated that a 66 per cent increase in the number of medical recruits and a 100 per cent increase in the number of nursing recruits is necessary to keep our health machinery in effective operation. There appeared to be general agreement that, while salary levels are too low, financial considerations are not the sole, or even the primary, obstacle which slows up recruitment. It was made clear in this discussion that the real reason why our enlistment lags is the fact that the nature of the public health program is presented in a form which lacks the slightest vestige of appeal to ambitious and imaginative youth. If the task of the public health officer is merely to direct communicable disease control and community sanitation, the medical student of real caliber is eminently wise in concluding that this is no career for him. These were fascinating problems in 1900; they are fascinating problems in Asia and Africa and South America today. In these fields in the United States, however, what the health officer during the last fifty years has done is to work himself out of a job.

The answer to this dilemma is a relatively simple one—to base our recruitment program on the health problems of 1950, not of 1900, as was forcibly pointed out at the C. P. E. meeting by Dr. Matthew R. Kinde.

What are the real problems of public health today—problems which are of urgent importance and which demand for their solution a basic understanding of human physiology and psychology, combined with the power of bold and creative planning?

1. The study and control of home and street accidents, which now constitute one of our major causes of death and disability.

2. The provision of adequate housing which will insure not only prevention of accidents and disease, but promotion of physiological and psychological well-being; and including city planning and redevelopment, which make decent housing possible.

3. Occupational hygiene, again interpreted in a broad sense and comprising the entire influence of the factory environment on health and efficiency, not merely the control of toxic dusts and fumes.

4. The problems relating to the prevention and cure of chronic disease and all the constitutional conditions relating to an aging population.

5. The planning of community clinic and hospital facilities (as under the Hill-Burton Act) as well as supervision and licensing of various existing institutions.

6. The coördination of existing community facilities for medical care and the planning of sound methods for filling gaps in the present program.

7. Rehabilitation of the crippled or disabled. We present in this issue of the *Journal* helpful discussions on this subject. In particular, we would urge our readers to study a most significant report prepared under the chairmanship of Dr. Theodore G. Klumpp by a Task Force for the Manpower Policy Committee on the Handicapped. This report demonstrates that for every federal dollar spent in getting a handicapped person back into productive work, there is returned to the federal treasury $10, just in the income tax on the sums earned by the rehabilitated worker. Biggs's illuminating phrase "Public Health Is Purchasable" is as true

of the diseases of the present day as it was of diphtheria and typhoid fever half a century ago.[1]

8. Mental Hygiene. Mental hygiene is somewhat like the weather. We talk about it a good deal, but we do nothing about it. Can the reader name a single community in which the concepts of sound mental health are actually embodied in education and in industry or are actively understood by the general population (as the concepts of communicable disease control are embodied and are understood).

The St. Paul Studies conducted by Bradley Buell and his research associates[2] have pointed out the possibilities of a new and comprehensive approach to such problems as these in the community as a whole. Dr. E. G. McGavran has well described the underlying objective of the present day as "The Diagnosis and Treatment of the Body Politic."

We do not yet know the answer to any of these problems, but it is precisely the unsolved problems—and only the unsolved problems—which can attract young men and women with the creative ability which we need in the leadership of the public health of the future.

It is in terms of these real issues of mid-century public health that our recruitment campaign should be conducted. They alone will offer a challenge to which the young physicians and lawyers and nurses of the day will respond; in these issues lies the only real appeal to the men and women who are capable of being leaders and pioneers in the future. The recruits we need are not those who are content to gaze complacently on the fruits of the past, but to conquer and develop the untilled fields of the future.

---

[1] A Report to the Chairman, Manpower Policy Committee, Office of Defense Mobilization, by the Task Force on the Handicapped. Washington, D. C.: Office of Defense Mobilization. January 25, 1952. (A summary of this report was published in the *Journal of Rehabilitation* (Mar.-Apr.), 1952.)

[2] Bradley Buell and Associates. *Community Planning for Human Services*. New York: Columbia University Press. 1952. 464 pp.

A SCHOOL EPIDEMIC OF TUBERCULOSIS

ONE of the communicable diseases which would least be expected to appear in epidemic form in a schoolroom might perhaps be tuberculosis; but a recent report from Great Britain[1] provides a striking instance of an outbreak of this sort. The demonstration was as clear and as dramatic as a 19th century study of typhoid fever.

Here are the main events, as finally brought out, but arranged in chronological order, the year being 1950.

May 8–12. Teacher X was temporarily in charge of the Infant's Class, although primarily responsible for Class III.

May 23–June 26. Teacher X was on sick leave attributed to "laryngitis."

July 15. Five children of the school found to have symptoms of primary respiratory tuberculosis.

July 17. Teacher X again absent, with a diagnosis of respiratory tuberculosis.

In this month 176 of the children were given Mantoux tests and positives were x-rayed. Fifty-two proved to be Mantoux-positive and 8 x-ray positive, four in the Infant's Class, and two in Class III.

In November, repetition of the testing program on all previous Mantoux-negatives revealed four more positive x-rays, all in Class III, to which the teacher had

returned. The rest of the school population (about 60 per cent of the total) showed only two positives, while a total of ten cases appeared among the children directly exposed to Teacher X, with an incubation period of one to two months.

The positive cases required only bed rest, with clinical and radiological supervision; but the incident provides an interesting example of what may happen in the type of nonimmune population with which we are faced at the present time. Except in Class III where 76 per cent of Mantoux tests were found positive in November, two-thirds of the children tested gave negative results.

[1] Bevan, R. T., Bray, P. T., and Hanly, J. F. *Brit. M. J.* 4735:828 (Oct. 6), 1951.

DIET AND VITAL RESISTANCE

THE writer can recall simpler days when any competent public health man could understand anything that was written about any research work bearing on the field of public health. With the evolution of laboratory research in highly complex fields, that period is long past! Molecule splitting has become almost as complex as atom splitting and the great mass of investigations in biochemistry are Greek to most of us.

Now and then, however, a trend in laboratory research makes itself manifest in a new line of study, which even the tyro can recognize as involving a new and important philosophical approach.

Such a new avenue seems to be opening up with regard to the more subtle effects of nutrition upon resistance to infectious disease.

It was natural to assume that adequate nutrition would aid the human body in its conflict with invading microbes; and this is undoubtedly true with respect to some diseases such as tuberculosis, for example. Recent studies at Columbia, Chicago, and elsewhere have revealed much more subtle relationships. To take one such communication, almost at random, Weiss and his associates[1] point out that "there is good experimental evidence for believing that the enzyme systems of virus-infected cells participate in the formation of new virus and that viruses multiply best in cells of high metabolic activity." These investigators find that the resistance of mice to the virus of murine pneumonitis is decreased by administration of thyroxine (which gives the effect of increased thyroid activity) and increased by administration of radioactive iodine which tends to destroy the thyroid tissue. The phenomenon is a highly complex one, attributed to "unknown alterations in the metabolic state of the affected animals rather than to simple quantitative changes in the level of energy changes in the affected cells."

In penetrating the jungles of our ignorance, there are many paths which lead nowhere. We can be sure, however, that the better understanding of the almost infinitely complex chemical reactions involved in the life of a parasite, in the life of a host, and in their interaction, will open up vistas of new knowledge; and that some of these vistas will lead to applications of major practical importance.

[1] Weiss, E., Moulder, J. W., and Itatani, M. K. *J. Infect. Dis.* 90:21 (Jan.-Feb.), 1952.

Clearing House on Public Health Salary Information and Personnel Needs

STUDY PUBLIC HEALTH NURSE SHORTAGE

Because of the acute shortage of all types of nurses, particularly in public health nursing, the U. S. Public Health Service has undertaken a study of nursing. The study, which will supplement the over-all functional study being made by the American Nurses' Association, is focusing on the amount and kind of nursing services required to meet minimum public health nursing needs in local health departments. It will try to answer such questions as:

a. Additional nursing service required in expanding defense areas.

b. How the available nursing supply can be "stretched."

c. The use of practical nurses or other aides in public health programs.

A committee of 17 national leaders is serving as consultants to the study, which is directed by Marion Ferguson, R.N., Ph.D., chief nursing consultant in the studies and demonstration section of the Service's Division of State Grants. For the past two years Dr. Ferguson has conducted studies of health officer functions.

The members of the National Committee, which held its first meeting May 22–23, are:

R. N. Barr, M.D., deputy executive officer, Minnesota Health Department

Douglas Courtney, Ph.D., director, Institute for Research in Human Relations, Philadelphia

Ruth B. Freeman, R.N., associate professor of public health administration, Johns Hopkins University School of Public Health

Hugh R. Leavell, M.D., professor of public health practice, Harvard University

Irving D. Lorge, Ph.D., executive officer, Institute of Psychological Research, Columbia University

Lyle Saunders, visiting associate professor of sociological research, University of Colorado Medical Center

Marion W. Sheahan, R.N., programs director, National Committee for the Improvement of Nursing Services

William C. Spring, Jr., M.D., professor of public health practice, Columbia University

Alice Sundberg, R.N., public health nursing director, Baltimore Health Department

Staff Members, Public Health Service:

Margaret G. Arnstein, R.N., nursing resources division chief

J. O. Dean, M.D., associate chief, Bureau of State Services

Mark D. Hollis, associate chief, Bureau of State Services

Elliott H. Pennell, resources planning chief, Dental Resources Division

Ex-officio members:

Alice F. Brackett, R.N., nursing section assistant chief, Children's Bureau

Hedwig Cohen, R.N., assistant director, National Organization for Public Health Nursing

Pearl McIver, R.N., public health nursing division chief, Public Health Service

Roberta Spohn, Research and Statistics Unit, American Nurses' Association

OHIO BULLETIN DISCUSSES RECRUITMENT

The Ohio State Health Department makes its bow to the public health man power shortage by devoting half of its 28 page March *Ohio's Health* to articles about recruitment. In five different articles, varied in style and content, the bulletin tells Ohio citizens, particularly its young people, a good deal about public health services and the people who practise it.

Three articles, Training for Public Health, Opportunities in Public Health, and Career in Public Health?, are addressed particularly to high school and college students and vocational counselors. They give a resumé of the various specialties in public health, and discuss such questions as what high school and college courses are valuable as preparation for one of the specialties

and what the opportunities for service and salaries are in the public health field. One article frankly admits that one will not get rich as a public health worker but that starting salaries are equal to those in other professions. Special attention is given to the intangible rewards of the profession.

Recruiting College Graduates by a college director of vocational services is a somewhat humorous article telling placement officers that the competition for college graduates continues heavy. This means scrutiny of personnel policies, training programs, as well as ingenuity in developing recruitment programs. The author predicts a long "winter" ahead in recruitment.

A fifth article, A Look at Ourselves, analyzes the results of a questionnaire answered by 131 staff members of the state and district offices of the Ohio State Health Department. Nearly 40 per cent "happened" into public health; of the 101 who were decided as to whether they wanted to remain in public health all but 12 now considered it their career field. The conclusion of the report: "Most of the persons are happy in their work, albeit they see its shortcomings. A look at ourselves reflects a smiling countenance." This study, a small sampling to be sure, has some clues as to the forces that operate to bring workers into public health. It is perhaps a line of investigation that could with profit be further explored.

CONFERENCE ON RETIREMENT PROBLEMS

The National Social Welfare Assembly in January, 1952, organized a national working conference on retirement of older workers. Its purpose was "to explore what other additional yardsticks (than chronological age) there are or need to be developed for determining how long and under what conditions older workers should continue in employment or be retired."

Sponsored by the Assembly's National Committee on the Aging and the McGregor Fund, it was held at Arden House, an out of town campus of Columbia University, and was attended by about 75 participants drawn from medicine, public health, sociology, management, labor, the press, government, and the academic world. Participants were divided into four discussion sections, each with a chairman and a recorder.

The four sections discussed the following subjects:

1. Practical ways of utilizing older workers
2. Assets and liabilities of older workers
3. Health and competence vs. age
4. Substitutes for arbitrary retirement

Proceedings of the conference with suggestions in these areas are in preparation and will later be available from the National Social Welfare Assembly, 1790 Broadway, New York 19.

IOWA UPGRADES NURSE SALARIES

On January 1, 1952, a revised nurse pay schedule went into effect for public health nurses employed in county nursing services and in the Iowa State Health Department. Graduate nurse salaries were increased 5 per cent, those for the four grades of public health nurses, from 18 to 24 per cent. "We shall be in a better position to hold personnel and to compete with other states in recruitment," is the comment of Mattie Brass, director of public health nursing of the State Health Department.

SOCIAL WORK SALARIES

Salaries and a wealth of other information about a profession closely allied to public health are reported in *Social Workers in 1950*. Published by the American Association of Social Workers, the study was made by the U. S. Bureau of Labor Statistics at the request of the National Council on Social Work Education and the National Social Welfare Assembly.

Of the 75,000 social workers in the

United States about 40 per cent were employed in public assistance programs. Almost two-thirds were employed by state, county, and local governmental units. This group was also the lowest paid. Federal government workers received the highest pay, private agency workers' salaries were somewhere in between those of federal and local employees. Seventy per cent of social workers were found to be women. Men generally received more than women in every position. Highest salaries were paid in the three Pacific Coast states with Middle Atlantic, New England, and Great Lakes areas next in that order.

American Association of Social Workers, One Park Avenue, New York 16; $1.00.

TEACHERS' SALARIES, 1949–1950

Preliminary figures on salaries of classroom teachers, principals, and other instructional personnel for the year 1949–1950 are reported in the April, 1952, issue of the *Journal of the National Education Association*. They are based on the teacher salary study made annually by the U. S. Office of Education. In spite of the limitations of the arithmetic average for portraying the existing situation, the summary suggests some interesting conclusions that may have similar implications for public health.

The first notable fact is the wide spread of average salaries among the various states. For example, the highest average salary reported for any state is more than twice as high as the average salary paid in 8 states, more than 40 per cent higher than the national average, and 15 per cent higher than the average salary reported in the second highest state.

The national average salary has more than doubled in the last 10 years.

In the last 5 years, 12 states have competed for the top 8 average salaries, with 4 of them among the top 8 each year—California, New York, Connecticut, and Washington, but not always in that order. California and New York were in either first or second place in each of the 5 years. Other states among the top 8 for one or more of the 5 years were Arizona, Illinois, Indiana, Maryland, Massachusetts, Michigan, New Jersey, and Rhode Island.

Final and detailed figures are available from the U. S. Office of Education, Washington 25, D. C.

A NEW DOCTOR-IN-TRAINING PROGRAM

The Department of Public Health and Preventive Medicine of the University of Pennsylvania has instituted a new type of program for the training of medical students. Under the program, first year medical students are assigned to individual families in the Philadelphia area. With close faculty supervision, the students serve these families as health advisers until graduation. The program is currently being supported by a grant from the Commonwealth Fund, of $22,500 annually. John P. Hubbard, M.D., is chairman of the Department of Public Health and Preventive Medicine.

REHABILITATION RECRUITMENT BOOKLET

"To give basic authoritative information on professions in rehabilitation" is the purpose of *Careers in Service to the Handicapped*." This 58 page booklet on the physical therapy, occupational therapy, speech and hearing therapy, and special education professions has been distributed through a special grant to 20,000 high school vocational counselors. The booklet, representing a coordinated attack on the critical personnel shortages in the field of rehabilitation, is sponsored jointly by the National Foundation for Infantile Paralysis, U. S. Office of Vocational Rehabilitation, and the National Society for Crippled Children and Adults. It was prepared by the staff of the last named. 11 LaSalle St., Chicago 3; 50¢.

Credit Lines

The Journal cannot furnish copies of items mentioned in Credit Lines. Please send requests to the addresses given.

"BY THEIR DEEDS—"

When You Plant for the Centuries is a report on the 1951 world-wide activities of the Unitarian Service Committee. The Committee, with its nonsectarian program, began in 1940 because "there were never enough life rafts for the human beings tossed about in the flood tides of war."

In 1951 medical teaching missions were sent to Iran and Israel, a medical education mission to Japan, a public health planning and a dental mission each to Germany, and an engineering education mission to Japan. In addition, an educational and child care institute was held in Germany, a rehabilitation center for refugee children in France was continued, three service camps set up for young people in the United States, and, by way of remembering that "man does not live by bread alone," a toy loan library for needy children in Boston.

The report is handsomely produced with good photographs and captions that epitomize the text.

William Emerson is president of the Committee, its executive director is Raymond D. Bragg, D.D., 9 Park St., Boston, Mass.

THE PARTIALLY SEEING CHILD

Education of Partially Seeing Children is the report of a Committee on this subject of the National Society for the Prevention of Blindness. Meeting in New York City in October, 1951, the Committee reviewed over-all policies and programs in this field of special education and made recommendations for future plans and actions. Its report discusses four different patterns of education—placement in schools for the blind, placement in special schools, placement in segregated classes in the public schools, and coöperative placement plans.

The Committee approves only the last named and recommends that the Society "continue to advocate the establishment of coöperative facilities in preference to any of the other three patterns of educating partially seeing children." Segregated educational programs of all kinds, the Committee indicates, accentuate the child's handicap, whereas the coöperative program minimizes his handicap and accentuates his positive attributes. Reprinted from the *Sight Saving Review* of January, 1952 (22:1), the report is available from the National Society for the Prevention of Blindness, 1790 Broadway, New York 19; 5¢.

"EMOTIONS OF EVERYDAY LIVING"

Two motion pictures among the materials developed for 1952 Mental Health Week are the first in a series on "Emotions of Every-day Living." They are: "Angry Boy," which tells the story of emotional disturbances created by family tensions that have led a preadolescent boy into serious trouble at school, and "The Steps of Age," which has to do with the emotional unpreparedness of an old couple to meet the changes incident to retirement and living with married children.

Each is 16 mm b&w, sound, the first running 33 minutes, the second, 25 minutes. Each was sponsored by the Mental Health Film Board. South Carolina was cosponsor of Angry Boy; Michigan of The Steps of Age.

To borrow or rent the films, inquiries should be made at state or local mental health authority, mental health society, public library, or 16 mm educational film libraries. Films may be purchased from the International Film Bureau, 6 N. Michigan Ave., Chicago 2, Ill. Angry Boy, $105; The Steps of Age, $95.

SCHOOL OF PUBLIC HEALTH BULLETIN

The *Alumni Bulletin* of the Association of the Alumni, Columbia University School of Public Health, began publication in May, 1952, coincident with the organization meeting of the Association. The first Alumni Day was celebrated on May 15 with a conference on "Current Problems in Administrative Medicine."

The first issue of the *Alumni Bulletin* is a four page affair into which is tucked a good deal of information—the story of DeLamar and his contribution to the development of the School, a page of news about alumni, and a history of changes in the curriculum as a part of an item indicating that the present curriculum is under study by a faculty committee. The officers of the Association are:

President—James P. Dixon, Jr., health officer, Philadelphia

Vice-President—August H. Groeschel, M.D., assistant medical director, New York Hospital

Treasurer—Leonard J. Goldwater, M.D., professor of industrial hygiene, Columbia University School of Public Health

Secretary—Waldo McNutt, M.P.H., who has just completed his year's work in administrative medicine at the School of Public Health

CARS FOR PUBLIC HEALTH NURSES

A broad gauge approach to this critical problem of administration in state and local health departments is included in the recent recommendations by the National Organization for Public Health Nursing Committee on Cars. As the report points out, agencies have tried to face the situation by supplying agency owned cars or by requiring that nurses provide their own cars for use on duty. But there are increasing problems as nurses are leaving jobs which require them to use their own cars. They find it difficult to buy and maintain automobiles because travel allowances have not kept pace with rising costs. For years the problem of transportation for students during their field experience has prevented a number from going into public health nursing.

This report considers the advantages and disadvantages of nurse ownership and agency ownership, considers cars for students in the field and the actual cost of transportation by automobile. The report concludes with a series of recommendations to correct the difficulties.

The American Public Health Association Committee on Administrative Practice at a recent meeting approved in principle this report and recommended it for study to public health administrators at state and local levels.

Reprints from *Public Health Nursing*, February, 1952, Publication 587, from National Organization for Public Health Nursing, 2 Park Ave., New York; 15¢.

PATTERN FOR FEEDING OLDER PERSONS

Eating Is Fun—for older people, too has been prepared by the American Dietetic Association especially for the managers of small homes for older people and proprietary nursing homes. It attempts to give the right answers to four questions:

Do my meals meet the food needs of the residents? Do my meals look "good enough to eat"? Does the food taste good? Is the food prepared so as to keep its food values?

Sample menus, buying and cooking tips, and general principles of cookery are included. American Dietetic Association, 620 No. Michigan Ave., Chicago 17, Ill.; 50¢.

FOUR SMALL CITIES SEE THE LIGHT

Mendocino County in California put its health department on a full-time basis in January, 1952 (*A.J.P.H.* 42,

4:436). Since then, its four cities that contain about a third of the county's population have contracted for the services of the county department. Thus the county department is serving about 41,000 persons.

HEALTH A FACTOR IN CITY PLANNING

The *Texas Health Bulletin* for January, 1952, indicates a commendable understanding of the part that the public health department should play in city planning. In "Planning the Growth of a City," Thad Patrick and W. H. Bell, junior engineer and legal consultant, respectively, of the State Department of Health, recognize that city planning has to do with living quarters, sanitation systems, water supply, sanitary schools, recreation facilities, and many others in which a health department has an interest.

The Texas State Health Department has organized a housing hygiene section in charge of an engineer trained in the *Appraisal Method for Measuring the Quality of Housing*, devised by the Committee on the Hygiene of Housing of the American Public Health Association.

A BIG SPLASH TAKES MANY FISHES

"The Strange Case of the Splashless Jellyfish" is a story in dialogue. Interestingly told and humorously illustrated its burden is that one person alone has little influence in his community; but all the people putting their oars in, "will sound like a veritable anvil chorus." In this instance, it was a petition to be signed for a new tuberculosis hospital added to the usual seal sale campaign, but the principle is universal. Albany County Tuberculosis Association, 411 County Building, Albany 7, N. Y. No information as to distribution.

ANNUAL REPORTS

1951 Health Record is indeed "A brief report from the Santa Clara County Health Department," as its cover states. In a dozen pages, and with a card file motif, each of ten activities is briefly summarized in one page of file cards, summary text, and photograph. The center spread is a series of cartoons representing the same services and, for good measure, the last page sums up. The report has some useful ideas for others writing annual reports that citizens will read. W. Elwyn Turner, M.D., is the health officer. Hall of Justice, San Jose 13, Calif.

Special Health Section, Wichita Sunday Eagle is the 1951 report of the Wichita-Sedgwick County (Kans.) Department of Public Health. Following up the successful newspaper reporting of the first year of the merger of city and county health departments in January, 1950, the Department is continuing to use this technic for keeping the more than 200,000 persons of the community in touch with what goes on in the Department. A 12 page section has room for lots of pictures and text about what is happening, with a lot left over for health education. M. Leon Bauman, M.D., is health officer, the issue is February 12, 1952, and the address Wichita, Kans.

WORTH ACQUIRING

"Guiding Principles for Adapted Physical Education," reprinted from the *Journal of the American Association for Health, Physical Education, and Recreation*, defines adapted physical education as a "diversified program of developmental activities, games, sports, and rhythms, suited to the interests, capacities, and limitations of students with disabilities who may not safely or successfully engage in unrestricted participation in the vigorous activities of the general physical education program."

The statement of principles has been prepared by a special AAHPER Committee on Adapted Education and endorsed both by the Association's board

of directors and the Joint Committee on Health Problems in Education of the American Medical Association and the National Education Association. The statement is designed for use in general schools and colleges rather than in special schools for handicapped children. The two-page, seven-principles statement is available free from the chairman of the Committee, H. Harrison Clark, director of graduate studies, Springfield College, Springfield, Mass.

Social Hygiene Pamphlets is a classified list that is revised annually by the American Social Hygiene Association. Its 1952–1953 listing has 20 new titles on sex education, marriage and family relations, social protection, and health. Single copy and quantity rates are shown for some 100 pamphlets. American Social Hygiene Association, 1790 Broadway, New York 19.

The Public Health Service Today, although it has some text is essentially a diagram in several parts of the organization and services of the U. S. Public Health Service. It is significant that the basic chart is entitled "The Federal Role in the Total Public Health Structure." The broad base of this structure is local government, local voluntary agencies, and private practitioners.

Maps show the location and kind of field activities of the Service both in the United States and in the rest of the world. P.H.S. Publication No. 165, Gov. Ptg. Office, Washington 25, D. C.

Polio Pledge—If polio comes to my community is a series of "I will remembers," "I wills," and "I will nots," that should be in the hands of every parent, particularly, and school teacher. A small flyer, it was distributed throughout the schools of the country in April and May. It explains briefly the scientific reasons for the few basic recommendations recommended by medical and health authorities. Supplied free by National Foundation for Infantile Paralysis, 120 Broadway, New York 5.

The Foundation also has available for distribution—1952 Polio Precautions, Polio in Relation to Camping, and Early Recognition of the Maladjusted Child which is a new issue of The Teacher's Role in Early Recognition of the Maladjusted Child by Morton A. Seidenfeld, Ph.D.

Health Instruction in the Secondary Schools is "an inquiry into its organization and administration." Written by H. F. Kilander, specialist in health education, U. S. Office of Education, it is based on a questionnaire study conducted coöperatively by the Office of Education and the American School Health Association. The questionnaire was developed by the latter's Committee on Health Education in the Secondary Schools and was sent to each state department of education in 1948. Questionnaires were returned by 33 state directors of health and physical education, 8 supervisors of secondary education, and 7 other members of state education departments. Govt. Ptg. Office, Washington 25, D. C.; 10¢.

A Rehabilitation Program for Patients with Tuberculosis by the Connecticut Tuberculosis Association is a good example of material beginning to be developed by states, which provides background and experience data in this relatively new field. It describes the operation of the rehabilitation team concept through the decentralized system in Connecticut. Connecticut Tuberculosis Association, 43 Farmington Ave., Hartford.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Report of the Task Force on the Handicapped—*Report to the Chairman, Manpower Policy Committee, Office of Defense Mobilization. Washington, D. C.: Office of Defense Mobilization, Executive Office of the President,* 1952. 67 pp. and Appendix.

Under the leadership of Dr. Theodore G. Klumpp, the Task Force on the Handicapped, a group of outstanding specialists, produced this readable and comprehensive analysis of the potential of handicapped persons for productive employment.

The logistical problems of World War II underlined the necessity for planned utilization of man power. They also were responsible for demonstrating the tremendous potential for productivity of the large segment of our population composed of the so-called "handicapped persons." Industry and the Armed Forces discovered that an appreciable number of men and women who already had or who developed disability following illness or injury were nevertheless capable of productive employment. The formula for this was appropriate medical care and selective placement in jobs commensurate with the residual capacity of the workers.

The *Report of the Task Force on the Handicapped* is a further recognition of the principle so dramatically established during the last war; that not only is employment of the handicapped good business, it is vital to the economy of the nation.

Valid as the principle may be in relation to defense or war mobilization, it is nonetheless a logical one in any enlightened, civilized, peaceful society.

The content of the report is organized into six chapters, a section on references, and an appendix. Chapter I comprises a review of the various facets of the problem of man power requirements and the need for utilizing handicapped persons. This first chapter considers also the growing impact of disability on the population, discussing such aspects as the effects of the advances in medical science, the aging population and our changing society. The second chapter is concerned with reviewing the resources which are available for rehabilitating and employing more handicapped workers. The succeeding chapters deal with the ways which the Task Force believes should be followed to expand existing facilities to provide more services to handicapped persons in order to make it possible for an increasing number to recover productive capacity.

Chapter VI is a summary and also contains 21 recommendations for organizing rehabilitation activities. These are practical and sufficiently flexible to serve as blueprints for action on the "grass roots" level in our communities.

This is a document which deserves reading and careful study. To those who work in the field of public health, it details a task at least equal to that which the pioneers in public health met at the turn of the 20th century. Rehabilitation and productive employment of handicapped persons is the number one health problem today. It is one which will continue to grow. Curiously, it is a problem which modern medicine and public health have created as a consequence of the many lifesaving and life-prolonging technics they developed.

BERNARD D. DAITZ

A Symposium on Essential Hypertension. An Epidemiological Approach—*Boston, Mass.: Commonwealth of Massachusetts, Office of the Secretary,* 1951. 368 pp. Price, $3.95.

This is the report of a symposium

held in Boston in February, 1951, as one result of a study by a recess commission of the State Legislature to inquire into what if any action the Commonwealth of Massachusetts should take in the control and treatment of high blood pressure. The Commission was given an initial appropriation of $100,000 by the General Court to carry out the study.

This is believed to have been the first conference at which epidemiologists and sociologists sat down with clinical and laboratory investigators, psychiatrists and practicing physicians and surgeons in group discussion of the problem of hypertension. The symposium was jointly sponsored by the Commission on Hypertension of Massachusetts; the School of Public Health of Columbia University, Division of Epidemiology, and the Bureau of Applied Social Research of the Department of Sociology, Columbia University. There were 34 participants representing largely the fields of medicine, epidemiology and sociology.

The five sections of this very comprehensive report include reviews of the pathology, medical aspects and epidemiology of hypertension. The report is significant because of the high grade studies that are reflected in its pages and especially because it represents the concern which a state may take in a basic problem covering both the field of public health and clinical medicine.

Persons interested in the report will find an excellent digest in the paper by Clark and Morsell in the May 1952 issue of this Journal, page 542.

REGINALD M. ATWATER

Antibiotic Therapy—*By Henry Welch and Charles N. Lewis. Washington, D. C.: Arundel Press,* 1951. 549 pp. Price, $10.00.

Knowledge in the field of antibiotic agents continues to accumulate so swiftly that changes of practical importance for the approach to therapy must be made occasionally. The relative usefulness and methods of administration of individual agents are most often involved. The physician must have access to an authoritative but concise source of information.

This single volume, *Antibiotic Therapy,* supplies a brief but comprehensive summary of the important features of each antibiotic agent now available, and of certain others which show promise. The history is outlined in the first section and is illustrated with full page portraits of several important early contributors. Subsequent sections contain detailed information on the pharmacology, antimicrobial spectrum and available preparations of each antibiotic. The largest section is devoted to specific infections. The experience obtained to date by clinical application of antibiotics to the therapy of each infection is outlined. The authors have been somewhat selective, to indicate established facts and provide some evaluation of the voluminous literature. This indirect evaluation is properly limited but will be helpful to the physician.

The criticisms which could be made involve aspects of the clinical application of specific agents. These are to be expected because of the rapid progress in this field and the unavoidable lapse of time. This does not detract from the work significantly, nor alter the basic information included.

This book will be a worth-while addition to the physician's library.

JOHN W. BROWN

The International Tuberculosis Campaign—Final Report. *Issued by the International Tuberculosis Campaign, July 1, 1948–June 30, 1951, Copenhagen, Denmark, October,* 1951. 121 pp.

This is a detailed summary of the mass BCG vaccination program carried out by the International Tuberculosis

Campaign in 23 countries in Europe, North Africa, the Middle East, Asia, and Latin America. In addition to a detailed report on headquarters operations, summaries are presented for all countries. Including the work outside the ITC programs conducted by the Scandinavian organizations alone, a total of 37,694,983 persons were given tuberculin tests and 16,650,624 were vaccinated. The campaign grew from earlier Danish BCG missions which started work in Poland and Germany in April, 1947. The Joint Enterprise, which is the official name for the ITC, was created on March 12, 1948, by a resolution of the Executive Board of the United Nations International Children's Emergency Fund, and consisted of a partnership of UNICEF and the three Scandinavian voluntary organizations. Headquarters were established in Copenhagen with Dr. Johannes Holm as director, and regional directors were appointed for Europe, North Africa, the Middle East, and Southeast Asia. The total cost of ITC operations, not including expenditures by the 23 countries involved, was approximately $3,201,000.

Statistical compilations were taken over early in 1949 by the WHO Tuberculosis Research Office. One section of the report contains charts, but no tables, on percentages of tuberculin reactors in 20 countries. A follow-up study on the effects of BCG vaccination has been set up in Finland. The report is well printed on good paper and contains many photographs of teams in operation. At the end, mention is made of a forthcoming publication, *Mass BCG Vaccination Campaigns—A Practical Guide*, to be available in 1952 from UNICEF EMRO, 24, Rue Borghese Neuilly-sur-Seine, France.

FLOYD M. FELDMANN

Proceedings of the Sixth Industrial Waste Conference. *Bulletin, Engineering Extension Department. Lafayette, Ind.: Purdue University Press,* 1951. 506 pp. Price, $1.25.

This is a collection of some 49 comprehensive papers on the nature and present status of industrial waste disposal in representative industries in the United States. It presents a valuable addition to the literature by furnishing an up-to-date progress report on research processes and equipment related to the treatment and salvage of wastes.

There are six papers dealing with some phase of the administrative aspect, including legal and political implications. The relationship between government and industry is presented, where the former is the protector and the latter the polluter of natural water supply.

The remainder of the papers are technical. The majority deal with the recovery of salvageable materials and the treatment of residual industrial wastes by modifications of standard sewage treatment processes.

Ten papers deal with miscellaneous subjects, including laboratory reports, pollutional effects, developments in industrial waste disposal, and atomic wastes.

JEROME F. THOMAS

Approved Laboratory Technic—*By John A. Kolmer, Earle H. Spaulding, and Howard W. Robinson (5th ed.). New York: Appleton-Century-Crofts,* 1951. 403 figures and 28 full page color plates. 1180 pp. Price, $12.00.

The present edition of this standard laboratory text has been considerably expanded over the previous 1945 edition, some 160 pages and 60 illustrations having been added. A great deal of the text has been rewritten and new material has been added to almost every section. As in previous editions, older methods of proven value have not been deleted unless newer methods have definitely proved to be of greater accuracy and diagnostic value. In many instances two or more methods have been included.

Some of the more important improve-

ments include the adoption of the recommendations of the Committee for the Clarification of Nomenclature for naming blood cells and diseases of the blood and blood-forming organs, inclusion of the methods of Papanicolaou for cytodiagnosis of cancer and of methods for antibiotic sensitivity tests, greatly expanding the sections on virology and on Rh hematology, the addition of methods for flame photometry and for skin tests for histoplasmosis and drug allergies. The table of contents has been improved by simplification, and a short appendix has been added giving useful conversion factors, a four-place logarithm table, a table of atomic weights, and directions for calculating milliequivalents and millimols.

In the preface the authors appropriately stress the fact that "no laboratory examination can be better than the thoroughness and skill with which it is conducted," and that the value of any examination can be impaired by the improper collection of the specimen.

The text is well printed on an excellent grade of paper and profusely illustrated. It should be in the library and on the work bench of every clinical laboratory.

EDMUND K. KLINE

Attaining Manhood *(rev. ed.)*, 97 pp.

Attaining Womanhood *(rev. ed.)*, 112 pp. *By George W. Corner. New York: Harper*, 1952. Price, $1.50 each.

These are twin books, almost of a Siamese variety, since both are united by many pages of the same text. The author is a research scientist of the first rank who writes very interestingly and for the most part simply and effectively. One book is addressed to the "intelligent boy of high school age," the other to girls on the same level, but with the expressed hope that it "will be useful to readers of twelve years," some of whom certainly would not be in high school.

Both volumes are intended to give a "scientific account of sex and human reproduction." Both presuppose a considerable background of knowledge about reproduction and a more advanced vocabulary than a twelve or thirteen year old usually has.

The books do provide a clear explanation of the structure and function of the reproductive system in both sexes. Much sound and helpful interpretation of the meaning of sex in human life is included. In a book for readers as young as twelve or thirteen, there seems little need for a description of coitus or even a brief discussion of homosexuality. To this reviewer the drawing of the "female external genital region" (Figure 10, Attaining Manhood) is wholly confusing. It is hard to imagine a boy getting anything like an accurate mental image from it. The companion drawing (Figure 10, Attaining Womanhood) seems almost equally unsatisfactory.

The addition in this "revised and enlarged" edition of an entire chapter dealing chiefly with the Kinsey Report is difficult to justify. It seems that few high school readers, indeed, especially at twelve or thirteen, would profit by it. They might even be confused by some of the implications regarding differences in "moral codes" and their "intermixture with mere prejudices or local customs."

ROY E. DICKERSON

Diagnostic and Experimental Methods in Tuberculosis—*By Henry S. Willis and Martin Marc Cummings (2nd ed.). Springfield, Ill.: Thomas*, 1952. 373 pp. Price, $10.00.

It is pleasant to review a book which provides the tuberculosis laboratory worker with the information he needs. This the Willis-Cummings *Diagnostic and Experimental Methods in Tuberculosis* does. It does it in a fresh, clear, intimate manner, indicating the authors' familiarity with laboratory details. Their opinion of methods of choice, therefore, is of real value.

There are 15 chapters. These contain the expected information seen in older laboratory guides, and in addition there are discussed such topics as the histoplasmin and coccidioidin tests, newer culture media, BCG vaccination, sensitivity tests for streptomycin and PAS. The last third of the book covers in great detail valuable methods in the study of experimentally produced tuberculosis. The writers show themselves to be thoroughly at home in this field. The high standards set by the senior author in his own laboratory are illustrated by the statement—"With a turnover of 600 to 700 animals annually we have seen no certain instance of spontaneous tuberculosis in ten years." Over 500 references are listed at the end of the book.

JOHN H. KORNS

Heredity in Uterine Cancer—*By Douglas P. Murphy. Cambridge, Mass.: Published for the Commonwealth Fund by Harvard University Press,* 1952. 101 pp., with 51 tables and 31 sub-tables, plus 21 pp. appendices and references. Price, $2.50.

The reader will find this book interesting, particularly if he knows biostatistics and genetics, for this is a technical report of a study in human heredity. The data deal with occurrence of cancer among relatives of 201 women with proved malignancy of the genital tract and 215 control probands. The study refers to a total of 6,445 individuals. Approximately one-half of the book is devoted to presentation of statistical data in the form of tables. The material is discussed in clear language; definitions of technical terms are given and offer no obstacle to the reader. Other important studies dealing with this subject are summarized and selected data from the findings of Brøbeck are compared where possible with those reported by Murphy. The author found it expedient to combine data of cancer of the cervix and of the fundus uteri, for their accurate separation proved impossible. Due attention is focused on careful selection of control groups for purposes of statistical study. Discussion of the findings leads to the conclusion that hereditary factors affect the frequency of appearance of cancer in the uterus; that factors which predispose to uterine cancer do not predispose to cancer in other sites; hereditary factors, other than such as are concerned with uterine cancer, play a role in the etiology of cancer elsewhere in the body.

LEONID S. SNEGIREFF

The United States Public Health Service, 1798–1950—*By Ralph Chester Williams. Washington, D. C.: Commissioned Officers Association of the United States Public Health Service,* 1951. 890 pp., illus. Price, $7.50.

A full account of the origin and development of the U. S. Public Health Service has long been needed. This need has now been filled for most purposes by Dr. Williams' book. From its beginnings in the Marine Hospital Service, the author traces the growth and multifarious activities of this outstanding health agency.

The creation of a well balanced institutional history is not an easy task. On the one hand, the historian must consider the organization, its structure and function, almost as if these existed apart from human activity. On the other hand, he cannot overlook the fact that an organization is people. The creative art of history is the ability to unite the universal with the particular, the general with the individual. This Dr. Williams has undertaken to do and has done well. He deals with the general trends in the development of the Public Health Service and illustrates them with the stories of the men who made and exemplified them. In addition, he speaks with the knowledge of one who has himself been a member of the Service, and is saturated with a sense of its proud tradition.

There are many stories, and many names well known to public health workers, as well as many whose work should be better known than it is. For example, in 1943 this reviewer was privileged to work with Benjamin E. Holsendorf in the East Harlem district of New York City in a rat control campaign, and it was a pleasure to find his important work on ratproofing given extensive and sympathetic consideration by Dr. Williams.

This book is a notable contribution to the still unwritten history of American public health and will very probably be the standard work on the subject for many years to come. GEORGE ROSEN

The Zoölogy of Tapeworms—*By Robert A. Wardle and James Archie McLeod. Minneapolis: University of Minnesota Press,* 1952. 804 pp., 419 figs. Price, $12.50.

In this book the authors have admirably accomplished their objective, which is to summarize what is known about the morphology, biology, reproduction, and physiology of tapeworms. Part I is concerned with a general discussion of tapework bionomics, the probable origin and evolution of tapeworms, and a historical account of the various systems of classification. Part II deals with detailed, systematic descriptions and keys for the identification of all known genera of the world and of all known species of North America. A description and the history of each order and also of most families precedes the taxonomic keys. A bibliography up to 1950 which covers more than 100 pages will be extremely valuable.

Without question this book will prove to be a *vade mecum* for helminthologists in particular and zoölogists in general. Its use to clinicians and those engaged in public health, however, is limited. Subjects of chief concern to the latter groups are for the most part lacking or are inadequately discussed. For such information the reader is referred to original articles or, unfortunately, to Brumpt (1936), the fifth edition of *Précis de Parasitologie* instead of to the most recent, or sixth, edition of this renowned text, which was published in 1949. DONALD L. AUGUSTINE

Occupational Outlook Handbook. *Bulletin 998 (2nd ed.). Washington: Gov. Ptg. Office,* 1951. 574 pp. Price, $3.00.

The U. S. Department of Labor in cooperation with the Veterans Administration have produced a valuable second edition of *Occupational Outlook Handbook.* It is primarily a summary of the results of recent studies of employment trends and long-range outlook of 433 occupations. The *Handbook* has come to be regarded as an indispensable tool of informed persons in vocational guidance. Data regarding the employment outlook, nature of work, training and other qualifications, and sources of information are provided about each occupation. It is well indexed.

The rapidly changing nature of our economic life, the extremely fluid character of occupational factors, and the relative nature of occupational data are stressed.

Health-service occupations are considered in detail. A bright future for engineers is presented. About one-fifth of health-service workers are employed by government.

ROSCOE P. KANDLE

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Honesty Is (Usually) the Best Policy—In a letter from a "Childbirth-Without-Fear" customer is this: "As a result of the class euphemisms I had honestly expected to be mildly uncomfortable. Unprepared, I let out a few yells, which, for no good reason, I find exceedingly embarrassing now."

ANON. A Mother Writes About Natural Childbirth. *Pub. Health Nursing* 44, 5:261 (May), 1952.

Citizen Participation—Symposiums held at the annual meeting of the National Health Council relate a wide variety of community and state-wide ventures in citizen participation presented in the form of nine "case reports."

ANON. What's in the Health Council Idea? *Pub. Health Rep.* 67, 5:433 (May), 1952.

Desirable Procedure—Half the pregnant women in a prenatal clinic were given dietary guidance; half ate as they pleased. The instruction improved the diets of the (low income) women, and the improvement affected the course and outcome of their pregnancies.

BERRY, K., and WIEHL, D. G. An Experiment in Diet Education During Pregnancy. *Milbank Mem. Fund Quart.* 30, 2:119 (Apr.), 1952.

Educated To Endure and Master—Though this is an obstetrical discussion, pure and simple, there is much of public health interest in it. The writer achieves a remarkable objectivity toward a subject about which so many are run-over by their own enthusiasms or their own prejudices.

DAVIDSON, H. B. Education for Childbirth. *New York State J. Med.* 8, 8:16 (Apr. 20), 1952.

From Medical Sciences Information Exchange—Governmental and private sources for research continue to increase their grants both great and small. Where the millions come from and where they go are shown in graphs you will want to see.

DEIGNAN, S. L., and MILLER, E. The Support of Research in Medical and Allied Fields for the Period 1946 through 1951. *Science* 115, 2987:321 (Mar. 28), 1952.

Dynamic Information—Chronic illnesses have a lower incidence (recognition of newly developed cases) than their prevalence (as measured at any one time). Both incidence and prevalence need to be considered. How long must a population be observed to establish incidence? For answer see—

DOWNES, J. The Longitudinal Study of Families as a Method of Research. *Milbank Mem. Fund Quart.* 30, 2:101 (Apr.), 1952.

A Little Ominous?—A wave of jungle yellow fever is moving northward from Panama at a velocity of 12 to 15 miles a month.

ELTON, N. W. Sylvan Yellow Fever in Central America. *Pub. Health Rep.* 67, 5:426 (May), 1952.

Bi-Monthly Examinations—Physicians will find that self-examination of the breast adds to their difficulties in the diagnosis of lesions. Alerting them to their new opportunities as well as their problems, this paper performs a valued service which health people might help somehow to broadcast.

HAAGENSEN, C. D. Self-Examination of the Breasts. *J.A.M.A.* 149, 4:356 (May 24), 1952.

Epidemiologic Storm Signals—Incidence and mortality of meningococcal

infections are rising. Modern therapy should have reduced mortality ratios; hence deterioration in reporting may be assumed. Better watch out for trouble!

HEDRICH, A. W. Recent Trends in Meningococcal Disease. *Pub. Health Rep.* 67, 5:411 (May), 1952.

Necessary Deprivation—What sort of adults do premature babies make? In this study of 22 children, prematurity seemingly had no effect on intelligence. About half had made unsatisfactory personality adjustment, however. In a way this seems a partial assessment of the value of postnatal maternal tenderness.

HOWARD, P. J., and WORRELL, C. H. Premature Infants in Later Life. *Pediatrics* 9, 5:577 (May), 1952.

Manna—Written especially to help Massachusetts cope with its inevitable alarm-viewers, anti-everythings, and plain crack-pots, this paper will provide you with just the help you will need if anything is to be done about fluoridating water supplies in your bailiwick. All you need do is to substitute your own sanitary statistics, shake well, and serve.

KNUTSON, J. W. The Case for Water Fluoridation. *New England J. Med.* 246, 19: 737 (May 8), 1952.

Dessert Course—Three ways by which mental hygiene and public health can begin to work out a productive partnership, are set down by a master of persuasive discourse and a writer of good reading.

LEMKAU, P. V. Toward Mental Health. *Ment. Hyg.* 36, 2:197 (Apr.), 1952.

Not for Closed Minds—After fifty years of inveighing against compulsory vaccination, Dr. C. Killick Millard (former British M. O. H.) is silenced by death. His demise occasions this assessment of the pros and cons of smallpox vaccination. This is something we should all expose our minds to—if they are open.

PAUL, H. Heresy or Holy Writ? *M. Officer* 87, 16:161 (Apr. 10), 1952.

Enlightened and Worried—Though this paper is written for the practising physician, it is concerned with the effects of the broad health educational campaign against cancer and so is of immediate interest to all of us in public health.

POLLACK, R. S. Tumors of the Breast in the Adult Female. *Am. Pract.* 3, 5:393 (May), 1952.

From a European Observer—"I must tell you what I admire most here in the United States . . . the splendid enthusiasm among your teams of workers . . . the most inspiring thing I have seen . . . it is the one thing I am taking back." Would to High Heaven we *all* deserved such praise!

REPOND, A. Invitation to Action. *Ment. Hyg.* 36, 2:177 (Apr.), 1952.

Health for the Aging—Enlisting the interest of practising physicians in geriatrics, the Surgeon General tells what the Public Health Service is doing in matters of research and demonstration, and you should know about them too.

SCHEELE, L. A. General Practice in an Aging Population. *GP.* 5, 5:93 (May), 1952.

Un-Vicious Circle—Better parents make for better babies, and better babies grow up to be better parents—of still better babies.

WALSER, H. C. Education for Parenthood. *Am. J. Nursing* 52, 5:566 (May), 1952.

Statistic—An outbreak of influenza (presumably) occurred in Bridgeport, Conn., last year. Of a vaccinated industrial group, 1.8 per cent showed evidence of infection; whereas 9.4 per cent of the unvaccinated were reported sick.

YEAGER, C. F. Influenza-Virus Vaccination in Industry. *Arch. Ind. Hyg. & Occup. Med.* 5, 4:365 (Apr.), 1952.

If additional information is desired regarding the articles listed in this Bibliography, please communicate directly with the publications in which they appeared; the addresses are furnished for your convenience.

Am. J. Nursing (American Journal of Nursing),
2 Park Ave., New York 16, N. Y.
Am. Pract. (American Practitioner)
227–231 S. Sixth St., Philadelphia 5, Pa.
Arch. Ind. Hyg. & Occup. Med. (Archives of Industrial Hygiene and Occupational Medicine)
American Medical Association,
535 N. Dearborn St., Chicago 10, Ill.
GP. American Academy of General Practice,
111 W. Jackson Blvd., Chicago 11, Ill.
J.A.M.A. (Journal of the American Medical Association)
535 N. Dearborn St., Chicago 11, Ill.
M. Officer (The Medical Officer) Whitefriars House,
72/78 Fleet St., London, E. C. 4, Eng.
Ment. Hyg. (Mental Hygiene), National Committee for Mental Hygiene, Inc.
372–374 Broadway, Albany, N. Y.
Milbank Mem. Fund Quart. (The Milbank Memorial Fund Quarterly)
40 Wall St., New York 5, N. Y.
New England J. Med. (New Eng'and Journal of Medicine), Massachusetts Medical Society,
8 The Fenway, Boston 15, Mass.
New York State J. Med. (New York State Journal of Medicine)
292 Madison Ave., New York 17, N. Y.
Pediatrics (Journal of the American Academy of Pediatrics)
636 Church St., Evanston, Ill.
Pub. Health Nursing (Public Health Nursing), National Organization for Public Health Nursing,
2 Park Ave., New York 16, N. Y.
Pub. Health Rep. (Public Health Reports), Superintendent of Documents,
Gov. Ptg. Office, Washington, D. C.
Science. American Association for the Advancement of Science
1515 Massachusetts Ave., N.W., Washington 5, D. C.

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ADMINISTRATIVE PROBLEMS IN A METROPOLITAN AREA: THE NATIONAL CAPITAL REGION. Geddes W. Rutherford. Chicago: Public Administration Service, 1952. 63 pp. Price, $2.50.

THE ADOLESCENT AND HIS WORLD. Irene M. Josselyn. New York: Family Service Association of America, 1952. 124 pp. Price, $1.75.

AIR POLLUTION. PROCEEDINGS OF THE UNITED STATES TECHNICAL CONFERENCE ON AIR POLLUTION. Sponsored by the Interdepartmental Committee on Air Pollution. Louis C. McCabe, chairman. New York: McGraw-Hill, 1952. 839 pp. Price, $12.50.

BACTERIA. K. A. Bisset. Baltimore: Williams & Wilkins, 1952. 123 pp. Price, $4.00.

CAREERS FOR NURSES. Dorothy Deming (2nd ed.). New York: McGraw-Hill, 1952. 349 pp. Price, $4.50.

CAUSES AND PREVENTION OF TUBERCULOSIS. Brice R. Clarke, M.D. Baltimore: Williams & Wilkins, 1952. 288 pp. Price, $6.50.

CLINICAL APPLICATIONS OF RECREATIONAL THERAPY. John Eisele Davis. Springfield, Ill.: Charles C Thomas, 1952. 118 pp. Price, $3.75.

CONTRIBUTIONS OF HARRY STACK SULLIVAN, THE. PAPERS ON INTERPERSONAL RELATIONS —A SYMPOSIUM. Edited by Patrick Mul-

lahy. New York: Hermitage House, 1952. 238 pp. Price, $3.50.

CONTROLS FROM WITHIN. TECHNIQUES FOR THE TREATMENT OF THE AGGRESSIVE CHILD. Fritz Redl and David Wineman. Glencoe, Ill.: The Free Press, 1952. 327 pp. Price, $4.50.

CRUELTY TO CHILDREN WITH PROPOSALS FOR REMEDIAL MEASURES. Eustace Chesser. New York: Philosophical Library, 1952. 159 pp. Price, $3.75.

ENGINEERING IN PUBLIC HEALTH. Harold E. Babbitt. New York: McGraw-Hill, 1952. 582 pp. Price, $8.00.

EXPERT COMMITTEE ON CHOLERA. WHO Publication (First report). New York: Columbia University Press, 1952. 20 pp. Price, $.15.

EXPERT COMMITTEE ON THE INTERNATIONAL PHARMACOPOEIA. WHO Technical Report (Ninth report). Series No. 50. New York: Columbia University Press, 1952. 36 pp. Price, $.25.

H IS FOR HEROIN. David Hulburd. New York: Doubleday, 1952. 122 pp. Price, $1.75.

HEALTH OF EIGHT MILLION. PROCEEDINGS OF THE NEW YORK CITY HEALTH CONFERENCE, NOVEMBER 16, 1951, AT THE NEW YORK ACADEMY OF MEDICINE. New York: The Mayor's Committee on Management Survey of the City of New York, 1952. 42 pp.

HEALTHY VILLAGE, THE UNESCO. AN EXPERIMENT IN VISUAL EDUCATION IN WEST CHINA. New York: Columbia University Press, 1952. 119 pp. Price, $.50.

INTERNATIONAL HEALTH ORGANIZATIONS AND THEIR WORK. Neville M. Goodman. Philadelphia: Blakiston, 1952. 327½ pp. Price, $6.50.

KWASHIORKOR IN AFRICA. J. F. Brock & M. Autret (WHO: Monograph Series). New York: Columbia University, 1952. 78 pp. Price, $1.00.

MASS BCG VACCINATION IN MALTA, ISRAEL AND SYRIA. Three Pamphlets by the Tuberculosis Research Office, WHO, Copenhagen. Neuilly-sur-Seine, France: International Tuberculosis Campaign, UNICEF EMRO, 24 Rue Borghese, 1951. 28, 34 and 44 pp., respectively.

MEDICAL BIOGRAPHIES. THE AILMENTS OF THIRTY-THREE FAMOUS PERSONS. Philip Marshall Dale. Norman, Okla.: University of Oklahoma Press, 1952. Price, $4.00.

MEDICAL AND HEALTH CARE RESOURCES AVAILABLE IN CHAUTAUQUA COUNTY, NEW YORK, 1950. Donald G. Hay and Olaf F. Larson. Ithaca, N. Y.: New York State College of Agriculture, Department of Rural Sociology, 1952. 44 pp.

MY FIGHT TO CONQUER MULTIPLE SCLEROSIS. Hinton D. Jonez as told to Miriam Zeller Gross. New York: Julian Messner, 1952. 227 pp. Price, $3.50.

PROCEEDINGS FIFTIETH ANNUAL CONFERENCE. Surgeon General, Public Health Service and Chief, Children's Bureau of the FSA with State and Territorial Health Officers, State Mental Health Authorities, State Hospital Survey and Construction Authorities. November 26–29, 1951, Washington, D. C. (For administrative use) Washington, D. C.: Public Health Service, 1952. 102 pp.

PSYCHOLOGY. Ross Stagner and T. F. Karwoski. New York: McGraw-Hill, 1952. 582 pp. Price, $5.00.

RADIOLOGICAL MONITORING METHODS AND INSTRUMENTS. Handbook 51. Washington, D. C.: Gov. Ptg. Office, 1952. 33 pp. Price, $.15.

REDUCE AND STAY REDUCED. Norman Jolliffe. New York: Simon and Schuster, 1952. 235 pp. Price, $2.95.

SOCIAL MEDICINE. E. H. Cluver. New York: Hafner Publishing Co., 1952. 862 pp. Price, $13.50.

THINK YOURSELF THIN. Thyra Samter Winslow. New York: Abelard Press, 1951. 345 pp. Price, $2.50.

WORLD POPULATION PROBLEMS AND BIRTH CONTROL. ANNALS OF THE NEW YORK ACADEMY OF SCIENCES. C. G. Hartman, M. A. Breckenridge, *et al.* (Vol. 54, Art. 5). New York: New York Academy of Sciences, 1952. 250 pp. Price, $3.00.

X-RAY PROTECTION DESIGN. Harold O. Wyckoff and Lauriston S. Taylor. Washington, D. C.: Government Printing Office, 1952. 36 pp. Price, $.15.

ASSOCIATION NEWS

EIGHTIETH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
CLEVELAND, OHIO, OCTOBER 20–24, 1952

STUDY OF NUTRITION SERVICES IN HEALTH DEPARTMENTS

Administrators, nutritionists, and other public health personnel will be interested in the fact that a study of nutrition services at national, state, and local levels is currently in progress. A Subcommittee on Nutrition Practices of the APHA Committee on Administrative Practice has been appointed to undertake the project. Members of the Subcommittee are as follows: Daniel Bergsma, M.D., chairman; John Browe, M.D.; William J. Darby, M.D.; Grace A. Goldsmith, M.D.; James M. Hundley, M.D.; Frances MacKinnon; Fred Mayes, M.D.; Leonard A. Maynard, Ph.D.; Robert E. Shank, M.D.; Alice H. Smith; Helen Stacey; Fredrick J. Stare, M.D.; Helen E. Walsh. The American Public Health Association is represented by Reginald M. Atwater, M.D., executive secretary.

The Subcommittee on Nutrition Practices at the time of its first meeting in March appointed a small working staff under the direction of Fredrick J. Stare, M.D., of the Harvard School of Public Health, to assume the responsibility for collecting and evaluating data and preparing a summary report or manual for the approval of the Subcommittee. The working staff consists of: Elizabeth K. Caso, Maryrose Jordan, Isabel Patterson, Marguerite Queneau, and Ruth Roth.

Funds to carry out the project have been made available to the American Public Health Association by the Milbank Memorial Fund, the Nutrition Foundation, Inc., and the Williams-Waterman Fund of the Research Corporation.

Valuable data are being accumulated by means of individual interviews, field trips, work conferences, and the review of pertinent resource material regarding administrative practices of state and local nutrition services. Information about current types of nutrition services is also being collected and evaluated. Possible future trends in nutrition services are being carefully noted. It is anticipated that the final outcome of this study will be the development of a Manual of Nutrition Practice that will serve as a guide for public health administrators, nutritionists, other members of the team of public health workers and students in schools of public health or field training courses.

SOUTHERN BRANCH MEETING

Almost 700 persons gathered in Baltimore to help celebrate the "coming of age" of the Southern Branch of the APHA, April 17–19. The spectacle, though, was not of a clumsy, overgrown lad suddenly thrust into the garb of a man. Rather, this 21st meeting presented a group of veterans, and the whole atmosphere was that of a well planned, well organized function.

L. M. Graves, M.D., director, Memphis-Shelby County, Tennessee Health Department, and president of the Southern Branch, presided at the opening session Thursday morning, the closing session Saturday morning, and at the annual banquet Thursday evening. One

afternoon was devoted to meetings of the nine different Sections, each of which had prepared its own Sectional program.

For the third year in a row the "curbstone" consultations were an outstanding feature of the meeting. All day Friday was devoted to these consultations when fifteen different portions of "curbstone" were set aside for informal discussion of the everyday problems that confront the health worker. Teams of experts covered each consultation area, each team carrying on for a two-hour period when they were relieved by a new team and a fresh attack on the subject. A careful schedule of topics and experts was included in the official program. There was not a time during the day when the consultation area was not intensely busy with free give-and-take between experts and amateurs.

One of the memorable parts of the program for those fortunate enough to attend was the paper given by Joseph W. Mountin, M.D., on the subject of "Financing Local Health Services on a National Level." This was one of the last public appearances of Dr. Mountin.

Officers elected for the year 1952–1953 were:

President—Harold C. Taylor, public health engineer, U. S. Public Health Service, Atlanta, Ga.

Vice-Presidents—Milton E. Kossack, director, Division of Health Education, State Department of Health, New Orleans, La.
Polly Ayers, D.D.S., director, Dental Division, Jefferson County Health Department, Birmingham, Ala.
Robert M. Brown, chief, Bureau of Environmental Hygiene, State Department of Health, Baltimore, Md.

Secretary-Treasurer — Andrew Hedmeg, M.D., director, Division of Preventive Medicine, State Department of Health, New Orleans, La.

Delegate to the APHA—L. M. Graves, M.D.

NEWS OF APHA AFFILIATED SOCIETIES

Arizona

The 22nd Annual Meeting of the Arizona Public Health Association was held in Flagstaff, April 17–18. The following new officers were elected at that time:

President—Frank Williams, director of health education, State Health Department, Phoenix

Past-President—Roy N. Jones, Director, Laboratory Division, City Health Department, Phoenix

Secretary—Betty Crane, State Health Department, Phoenix

Treasurer—Beatrice Ezell, State Health Department, Phoenix

The new representative on the APHA Governing Council is Lad R. Mezera, M.D., director of Maternal and Child Health, State Health Department, Phoenix.

This Affiliated Society will hold its next meeting in Yuma, in April, 1953.

Georgia

Close to 500 delegates attended the 23rd Annual Meeting of the Georgia Public Health Association in Savannah, May 5–7.

The Honorable Herman E. Talmadge, governor of the State of Georgia, made the principal address at the opening session. A general session entitled Mental Health offered papers on Rehabilitation of Alcoholics, Mental Hygiene, and Mental Hygiene Aspects of Housing; a Symposium on International Health occupied another general session; a third general session included papers on Antibiotics, Fluoridation, Interpersonal Relationships, and Civil Defense. Sessions were also sponsored by the following Sections: Medical Officers, Public Health Nursing, Sanitation, Health Education, Laboratory, Communicable Disease Investigators, Clerical.

Officers to serve for the 1952–1953 fiscal year are:

President—Joel C. Beall, engineering director, Sanitation Division, Bibb-Jones Health District, Macon

President-Elect—C. S. Buchanan, preventable disease control executive, State Department of Health, Atlanta

Vice-President—David M. Wolfe, M.D., commissioner of health, Dougherty County Health Department, Albany

Secretary—Mayola S. Center, assistant director, Division of Health Education, State Department of Health, Atlanta
Treasurer—Ernest B. Davis, secretary-treasurer, State Department of Health, Atlanta
Representative to APHA Governing Council—James A. Thrash, M.D., commissioner of health, Muscogee County Health Department, Columbus
Representative to Southern Branch, APHA Governing Council—E. J. Sunkes, Dr.P.H., director, Division of Laboratories, State Department of Health, Atlanta

Idaho

The Idaho Public Health Association held its 1952 Annual Meeting April 24–25 in McCall, at which time the following officers were elected to serve for the ensuing year:

President—Allen Cutler, D.D.S., Dental Association, Boise
1st Vice-President—Joe Latimore, Municipal League, Coeur d'Alene
2nd Vice-President—S. D. Simpson, M.D., Medical Association, Caldwell
3rd Vice-President—Edna Callister, Local Health Council, Arco
4th Vice-President—A. Ben Wheeler, Idaho Tuberculosis Association, Boise
5th Vice-President—Ed Knopp, Pharmacy Association, St. Maries
Secretary—Frances M. Goodwin, Idaho Tuberculosis Association, Boise
Treasurer—Dorothy D. Campbell, St. Luke's Hospital, Boise

Illinois

The 12th Annual Conference of the Illinois Public Health Association took place on April 3 and 4 in Springfield.

Narcotics as a Public Health Problem, The Veterinarian in Public Health, and Nutritional Aspects of Geriatrics were the subjects covered in a general session; Public Relations in Public Health was the address at the banquet session; Health Hit Parade was the title of a session sponsored by the Illinois Society of Public Health Educators, and an entire session was devoted to a discussion of Interpersonal Relationships in Health Activities. Other topics covered in the three remaining sessions were: Sanitation in a County Health Department, Sanitation in Foreign Countries, Home Safety, Microscopy, Infant Diarrhea, Rabies, Defense Against Bacteria in Warfare, Mass X-ray Surveys, Fluoridation, Control of Communicable Diseases, ACTH and Cortisone, Brucellosis.

Harold M. Cavins, Ed.D., professor of health education, Eastern Illinois State College, Charleston, assumed the presidency of the Society for the coming year, and elected president-elect was Mary M. Dunlap, R.N., associate professor of nursing education at the University of Chicago. Ben D. Kiningham, Jr., executive secretary, Illinois Tuberculosis Association was continued as secretary-treasurer. Reëlected representative to the APHA Governing Council was Baxter K. Richardson, deputy director, Division of General Administration, Illinois Department of Health, Springfield.

Iowa

On April 24–25 in Des Moines, the Iowa Public Health Association met for its 25th Annual Meeting. Appearing on the two-day program were a number of health workers in Iowa and several Missouri representatives of the Public Health Service, discussing such topics as Brucellosis, Fluoridation of Water Supplies, Municipal Garbage and Refuse Disposal, School Health, Why Nursing Affects Everyone, Fringe Area Sanitation. Officers were elected as follows:

President—John A. Johnson, Des Moines
President-Elect—Edmund G. Zimmerer, M.D., director, Division of Cancer Control, State Department of Health, Des Moines
Vice-President—Stanley L. Hendricks, D.V.M., public health veterinarian, Division of Preventable Diseases, State Department of Health, Des Moines
Secretary-Treasurer—L. E. Chancellor, director, Division of Vital Statistics, State Department of Health, Des Moines

Kansas

The 10th Annual Meeting of the Kan-

sas Public Health Association was held in Kansas City, May 5–7. Three general sessions were held and section sessions were offered by the Health Officers, Public Health Nursing and Sanitation Sections. Out-of-state speakers included health workers from Missouri, Colorado, District of Columbia, Maryland, and Illinois. The American Public Health Association was represented by Roscoe P. Kandle, M.D., field director.

A feature of the meeting was the Samuel J. Crumbine Banquet, at which the Crumbine Medal Award was presented to E. V. McCollum, Ph.D., professor emeritus of biochemistry at Johns Hopkins University. Medals were presented this year also to the past recipients of the Award, namely, C. H. Kinnaman, M.D., C. H. Lerrigo, M.D., and Earnest Boyce.

The 1952–1953 officers are:

President—Homer F. Davis, eastern Kansas representative, National Foundation for Infantile Paralysis, Topeka
President-Elect—Roberta E. Foote, R.N., acting director of public health nursing, State Board of Health, Topeka
Vice-President—H. Wallace Lane, M.D., director, Butler-Greenwood County Health Department, El Dorado
Secretary-Treasurer—Evelyn Ford, records consultant, State Board of Health, Topeka

The KPHA will meet jointly with the Middle States Public Health Association in 1953 in Topeka, April 13–15.

Michigan

The Michigan Public Health Association met for its 31st Annual Session on May 14–16 in Detroit under the presidency of Marjorie Delavan, chief, Section of Health Education, Michigan Department of Health. Registered attendance was close to 600.

Among program participants from outside Michigan were Dwight Barnett, M.D., professor of administrative medicine, Columbia University, New York; Carl Anderson, M.D., of the Public Health Service Regional Office in Chicago; Mrs. Anna Mae Wilson, food editor of *Today's Health*, Chicago, and Reginald M. Atwater, M.D., executive secretary of the American Public Health Association.

The program offered two general sessions and section sessions of particular interest to sanitarians, health officers, public health dentists and dental hygienists, public health nurses, health department clerks, and nutritionists. An organizational meeting for public health veterinarians was held. A meeting of the Michigan School Health Association followed the conclusion of the MPHA sessions.

Officers for the coming year are:

President—Patricia Walsh, Director of Nursing, Washtenaw County Health Department, Ann Arbor
President-Elect—Fred Wertheimer, D.D.S., chief, Section of Dentistry, Michigan Department of Health, Lansing
Vice-President—Janette Severance, chief clerk, Lansing-Ingham County Health Department, Branch Office, Mason
Secretary-Treasurer—La Rue Miller, chief, Environmental Sanitation, Michigan Department of Health, Lansing
Representative to Governing Council of APHA—Marjorie Delavan

Missouri

On May 1, 2, and 3 in Springfield the Missouri Public Health Association met for its 26th Annual Meeting.

Two general sessions were held, one of them entitled Public Health in Missouri—Past, Present and Future; this was a Symposium of the Health Officers, Laboratory, Vital Statistics, Sanitation, Nursing and Health Education Sections. Several separate section sessions also took place. Out-of-state speakers included Henry C. Niblack, M.D., of the Division of International Health of the Public Health Service, Genevieve Stout of the Venereal Disease Research Laboratory at Chamblee, Ga., and Roscoe P. Kandle, M.D., field director, APHA.

The following officers were elected:

President—Irma C. Adams, director, Bureau of Laboratories, Missouri Division of Health, Jefferson City

President-Elect—Donald E. Pratt, executive secretary, Missouri Tuberculosis Association, St. Louis

Vice-President—Herbert R. Domke, M.D., commissioner of Health, St. Louis County Health Department, Clayton

Secretary-Treasurer—Paul F. Rector, director of Public Health Education, Missouri Division of Health, Jefferson City

Representative to APHA Governing Council—J. Earl Smith, M.D., health commissioner, St. Louis Division of Health

The by-laws of the Society were revised at this meeting. The 1953 Annual Meeting will be held in Jefferson City, May 4–6.

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Khosrow Bassiti, M.D., Univ. of North Carolina School of Public Health, Box 229, Chapel Hill, N. C., Student

W. P. Edmunds, M.D., Court House, Chardon, Ohio, Geauga County Health Commissioner

Neil S. Gordon, M.D., C.M., 180 Willis St., Westminster, Md., Deputy State and County Health Officer

Robert H. Hamlin, M.D., M.P.H., 15 Hastings Hall, 1529 Massachusetts Ave., Cambridge 38, Mass., First Asst. to the Commissioner of the Massachusetts Dept. of Public Health

Crozier S. Hart, M.D., 723 Arizona Ave., Trinidad, Colo., District Health Officer, Las Animas-Huerfano Counties

Richard Hofstra, M.D., 119 West Church St., Adrian, Mich., Director, Lenawee County Health Dept.

Mariano C. Icasiano, M.D., M.P.H., City Health Dept., Manila, Philippines, City Health Officer

D. Ross Nicol, M.D., Service d'Eradication du Pian, Port-au-Prince, Haiti, Chief Medical Adviser, Yaws Eradication Program in Haiti (World Health Organization)

Rolando E. Roges, M.D., calle L No. 460, Vedado, Habana, Cuba, Instructor, National Sanitary School, Public Health Dept.

Ralph A. Seltzer, M.D., U. S. Indian Service, Sells, Ariz., Medical Officer, Bureau of Indian Affairs, U. S. Dept. of the Interior

Harry Y. Spence, M.D., American Embassy, Teheran, APO 205, PM, New York, N. Y., Surgeon, USPHS, Assigned to International Health

John R. Stanley, M.D., 2505 West Gilbert St., Muncie, Ind., Physician

Raymond A. Tearnan, M.D., Alger County Court House, Munising, Mich., Director, Alger-Schoolcraft Health Dept.

Marian I. Templin, M.D., D.P.H., 2090 Wyandotte East, Windsor, Ontario, Canada, Asst. Medical Officer of Health, City of Windsor

John J. Toomey, 10 Andover St., Salem, Mass., Agent, Board of Health, City of Salem

Laboratory Section

Ernesto Cervera-Berron, M.D., Lopez No. 34, Despache 22, Mexico, D. F., Miembro del Cuerpo Tecnico Consultivo de la Secretaria de Salubridad y Asistencia

Marjorie B. Dunlap, M.A., Nashoba Health Center, Ayer, Mass., Bacteriologist

Joe E. Edmundson, A.M., 224 Eckles Hall, Univ. of Missouri, Columbia, Mo., Professor of Dairy Husbandry

George A. Hottle, Ph.D., National Institutes of Health, Bethesda 14, Md., Senior Scientist, Laboratory of Biologics Control, National Microbiological Institute

Adolph J. Marsh, 75 Pleasant St., Windsor, Conn., Senior Microbiologist, Connecticut State Dept. of Health

John R. Nelson, State Health Dept., Bel Air, Md., Sanitarian, Maryland State Dept. of Health

Lt. Irving Olitsky, 2nd Army Area Medical Lab., Ft. George G. Meade, Md., Chief, Bacteriology Dept.

Jane E. Perkins, 366 Gross St., Pittsburgh 24, Pa., Laboratory Technician, Bacteriologist, Western Pennsylvania Hospital

Iona M. Reynolds, M.T., 41 Church St., Box 71, Thorndike, Mass., Research Instructor, Mastitis Laboratory, Univ. of Massachusetts

Sylvia Safier, 2678 Ocean Ave., San Francisco, Calif., Director, Safier Laboratories

Kenneth L. Senior, M.S., 5436 Baltimore Ave., Philadelphia 43, Pa., Professor and Chairman, Dept. of Biochemistry, Philadelphia College and Hospital of Osteopathy

Kenneth L. Tallman, M.A., 1110 North Garth Ave., Columbia Mo., Instructor of Dairy Husbandry, Dairy Bacteriology, Univ. of Missouri

Prayoon Tantbirojn, M.B., 337 Sampeng St., Bangkok, Thailand, Physician, Tuberculosis Division, Dept. of Public Health of Thailand

W. L. Williams, M.S., Louisville Water Co., Filter Plant, Louisville 6, Ky., Asst. Superintendent of Purification

Frederick J. Wishart, M.S., M.P.H., 1852 Greenwood Road, Roanoke, Va., Director of Laboratory, City Health Dept., Roanoke, Va.

Statistics Section

James T. Baird, Jr., B.S., 151 W. 10th St., Jacksonville, Fla., Statistician, Bureau of Vital Statistics, Florida State Board of Health

Peter Kong-ming New, 1308 Rosemary Lane, Columbia, Mo., Asst. Instructor, Dept. of Rural Sociology, Univ. of Missouri

Engineering Section

Donald J. Boughton, Box 550, Couer d'Alene, Ida., Senior Sanitarian, Idaho Dept. of Public Health

Gerson Chanin, East Bay Municipal Utilities District, P.O. Box 720, Oakland 4, Calif., Chief Sanitary Chemist

Edwin A. Erickson, Okinawa Shima, 6351st A. B. Wing, APO 235, PM, San Francisco, Calif., Safety Director, U. S. Air Force

William L. Garvey, 276 First Ave., New York, N. Y., Student, Purdue Univ.

Edward M. Kennelly, D.V.M., 7 Stewart Place, White Plains, N. Y., Veterinarian and Assoc. Sanitarian, Westchester County Dept. of Health

Edwin M. Lamphere, P.O. Box 750, Fairbanks, Alaska, Asst. Sanitary Engineer (R), USPHS, Arctic Health Research Center

George E. Schmidt, 279th Station Hospital, Prev. Med. Sec., APO 742, PM, New York, N. Y., Public Health Officer, Berlin Military Post

Hassan Kamkar Shahrudy, Shah-Reza Ave., Teheran, Iran, Sanitary Engineer, Point IV

E. W. Simpson, Jr., B.S., M.P.H., Director of Sanitation, Health Dept., St. Joseph, Mo.

Hunter G. Taft, Jr., Benning Road, Apt. 3-D, Columbus, Ga., Asst. Preventive Medicine Officer (Sanitary Engineer) U. S. Army Hospital, Fort Benning, Ga.

Alfred W. West, 7829 Terrace Drive, El Cerrito, Calif., Public Health Engineer, Division of Water Pollution Control, USPHS

Basil Yurchenco, 452 Fort Washington Ave., New York, N. Y., Architect

Industrial Hygiene Section

T. S. Armstrong, M.D., 64 South Pitt St., Carlisle, Pa., Orthopedic Surgeon

Daniel C. Braun, M.D., Industrial Hygiene Foundation, Mellon Institute, Pittsburgh, Pa., Medical Director

Food and Nutrition Section

Arthalia Lee Rayford, 19 West Burwell St., Salem, Va., Dietitian, Burrell Memorial Hospital, Roanoke, Va.

Norman W. Staalson, 819 Franklin St., Manitowoc, Wis., City Sanitarian, Manitowoc Health Dept.

Virginia R. Toews, M.A., Univ. of Kansas, Medical Center, Kansas City, Kans., Educational Dietitian

Maternal and Child Health Section

John C. Cobb, M.D., 615 N. Wolf St., Baltimore 5, Md., Instructor in Maternal and Child Health, Johns Hopkins School of Hygiene and Public Health

H. A. Grubschmidt, M.D., 1061 2nd St., Santa Rosa, Calif., Medical Head, Rheumatic Fever Program in Sonoma County, (Crippled Children)

Theodor Oxholm, Rosemont, Esophus, N. Y., Chairman and Acting Exec. Secy., Exec. Committee, Local Public Health Units Sub-Committee of the National Health Council

Public Health Education Section

Margaret Beattie, R.N., M.P.H., 409 Thompson, Ann Arbor, Mich., Student, Univ. of Michigan, Graduate School of Public Health

Lavern G. Borg, 905 Main St., Watsonville, Calif., Student, Univ. of California, School of Public Health

Beatrice M. Burford, Middletown, Conn., President, Connecticut Tuberculosis Assn., Hartford, Conn.

Robbie H. Burton, The Waldorf-Astoria, New York 22, N. Y., Consultant on Welfare Services, Association of the Junior Leagues of America, Inc.

Margaret M. Drennan, M.S., 56 Terrace Road, Medford, Mass., Health Educator, Home Accident Prevention Program, Cambridge Health Dept.

Marie Ford, 107 S.E. Orlin Ave., Minneapolis 14, Minn., Health Education Consultant, Minnesota Dept. of Health

Marie D. Grant, 1180 Sherman, Apt. 307, Denver, Colo., Senior Asst. Nurse Officer, USPHS

William M. Hartnett, 1704 Parkview, Caruthersville, Mo., Director, Health Education

and Rehabilitation, Missouri Tuberculosis Assn.

Catherine S. Hyde, M.P.H., City Hall, Batavia, N. Y., Exec. Secy., Genesee County Christmas Seal Committee

Reginald A. Johnson, 1133 Broadway, New York 10, N. Y., Director, Housing Dept., National Urban League

Josephine Nelson, The Meridian Hill, 16th at Euclid, N.W., Washington 9, D. C., Staff Asst., President's Commission on the Health Needs of the Nation

Ruth L. Pattison, 1225 Cleveland Heights Blvd., Cleveland Heights 21, Ohio, Health Educator, Cleveland Division of Health

Sister M. Rolandina, R.N., 204 Overton, Memphis, Tenn., Director of Nursing, St. Joseph School of Nursing

Mary West, M.A., 1615 Lincoln St., Long Beach 10, Calif., Librarian, Public Health Library, Dept. of Public Health

Public Health Nursing Section

Clara Annabil, M.S., 116 West Fern, Redlands, Calif., Director of Public Health Nursing, San Bernardino Health Dept.

Marguerite R. Berry, R.N., 1060½ 14th St., Boulder, Colo., Student, Colorado Univ., School of Nursing

Nora F. Cline, R.N., 214 Railroad Ave., Carnegie, Pa., Supervisor and Mental Health Nurse Consultant, VNA Allegheny County, Pa.

Ida Reid Cohen, R.N., 280 Forest Hill Drive, Asheville, N. C., Supervisor of Nurses, Asheville City Health Dept.

Eunice Diggle, 2078 Mesa, Muscoy, San Bernardino, Calif., Staff Nurse, San Bernardino County Health Dept.

Helma LaFrentz, Box 112, Dow City, Ia., County Public Health Nurse, Board of Supervisors, Crawford County

Dorothy C. Malafa, 3440 E. 116th St., Cleveland 20, Ohio, Asst. Supervisor, Cleveland Division of Health

Mary D. O'Hearn, R.N., 1200 E. Fairmount Ave., Milwaukee 11, Wis., Supervisory Nurse, Whitefish Bay Health Dept.

Pansy E. Roberts, 465 Bay St., Toronto, Ontario, Canada, Director, Division of Public Health Nursing, Dept. of Public Health

Catherine M. Taylor, 9624 56th South, Seattle 8, Wash., Supervisor, Southeast Office, Public Health Nursing, Seattle-King County Health Dept.

Clara Van Ens, 410 N. State, Ann Arbor, Mich., Staff Nurse and Field Teacher, Washtenau County Health Dept.

Epidemiology Section

Commdr. Horace M. Gezon, M.C., USNR, Route No. 1, Rockville, Md., Officer-in-Charge, Epidemiology Dept., Naval Medical School

Christian R. Klimt, M.D., M.P.H., Palais des Nations, Geneva, Switzerland, Medical Officer, Virus Diseases, Division of Epidemiology, World Health Organization

Edwin F. Russo, D.V.M., P.O. Box 121, Alexandria, Va., Veterinarian, Animal Hospital

Horst A. Schneider, M.D., D.T.M., 600 W. 168th St., New York 32, N. Y., Student, Columbia Univ., School of Public Health

School Health Section

M. Ary Bordes, M.D., 615 N. Wolfe St., Baltimore, Md., World Health Organization Fellow, Johns Hopkins School of Hygiene and Public Health

C. Edwards Case, Jr., M.D., 15 N. Bridge St., Somerville, N. J., Physician, Somerville Public Schools

Charlotte E. Wilcox, M.S., 707 E. Empire, Bloomington, Ill., Asst. Professor of Biological Science, Chairman of Health Education, Illinois State Normal Univ., Normal, Ill.

Dental Health Section

Clarence A. Hanson, D.D.S., 715 Lake St., Oak Park, Ill., Dentist, Private Practice

Arthur P. Hayward, D.D.S., 986 Second Ave. S., Wisconsin Rapids, Wis., Dentist, Private Practice

Ezra L. Ludwig, D.D.S., 840 LaSalle Bldg., Minneapolis, Minn., Dentist, Private Practice

Vincent E. Mannino, D.D.S., Box 392, Las Vegas, Nev., Public Health Dentist, Nevada State Dept. of Health

Harvey A. Stein, D.D.S., 127 Noel St., Springfield, Mass., Chief, Dental Service, Springfield Veterans Administration Office

Arnold Tamarin, D.D.S., General Delivery, Lovelock, Nev., Public Health Dentist, Nevada State Dept. of Health

Medical Care Section

Major Jose Behm, M.C., Lira 1250, Santiago, Chile, S. A., Medical Service, Chilean Air Force

Donald J. Caseley, M.D., 922 E. 84th St., Chicago, Ill., Medical Director, Commission on Financing of Hospital Care

Julius W. Davenport, Jr., M.D., 1719 Napoleon Ave., New Orleans 15, La., Serologist, Southern Baptist Hospital

Charles R. Drake, M.D., 600 Physical and Surgical Bldg., Minneapolis 2, Minn., Staff, Swedish and Deaconess Hospitals

Caldwell B. Esselstyn, M.D., 454 Warren St., Hudson, N. Y., Surgeon and Medical Director, Rip Van Winkle Clinic

Norman S. Finer, M.A., 1602 Dudley Ave., Utica, N. Y., Student (Hospital Adminis-

tration) Columbia Univ. School of Public Health

John Hinman, M.D., 1020 North Rush St., Chicago 11, Ill., Research Assoc., Medical Care Division, Commission on Financing of Hospital Care

Douglas H. McAllister, Onslow County Health Dept., Jacksonville, N. C., Public Health Adviser, USPHS

Laurentino Munoz, M.D., 500 Riverside Drive, New York, N. Y., Student (Hospital Administration) Columbia Univ. School of Public Health

John A. Nash, Jr., M.P.H., 165 South St., Wrentham, Mass., Student, Tulane Univ., Division of Graduate Medicine

Leon J. Niemiec, B.B.A., 147-43 Ferndale Ave., Jamaica 35, N. Y., Student (Hospital Administration) Columbia Univ. School of Public Health

Francis J. Phillips, M.D., Seward Sanatorium, Bartlett, Alaska, Medical Director and Thoracic Surgeon

William Reid, 30 Church St., New York 7, N. Y., President and General Manager, Hudson and Manhattan Railroad Co.

Cornelius H. Traeger, M.D., 270 Park Ave., Suite 7G, New York 17, N. Y., Medical Director, National Multiple Sclerosis Society

Adeline L. Van Deventer, M.A., 39 Columbia St., Albany, N. Y., Medical Social Consultant, New York State Health Dept., Division of Medical Services

Anthony J. Zolenas, Jr., M.P.H., 219 Hopkins Road, Baltimore 12, Md., Inspector General for Surgeon General, U. S. Army

Unaffiliated

Alta Ashley, M.D., Ph.D., M.P.H., Bureau of Health, State House, Augusta, Me., Research and Special Asst.

William S. Beacham, 15-B Glen Lennox, Chapel Hill, N. C., Administrative Asst., Continuation Education Project, Univ. of North Carolina, School of Public Health

Victor J. Cabelli, Ph.D., Univ. of Missouri, Medical School, Dept. of Bacteriology, Columbia, Mo., Asst. Professor of Bacteriology and Preventive Medicine

Norman S. Hayner, M.D., University Hospital, Dept. of Med., Ann Arbor, Mich., Student

William C. Knight, 3541 Midland Ave., Memphis, Tenn., Inspector, Food and Milk Division, Memphis and Shelby County Health Dept.

John A. Norris, Jr., 733½ Saybrook Ave., Los Angeles 22, Calif., Acting Entomologist, Los Angeles City Health Dept.

George P. Voss, 125 River Road, Grandview-on-Hudson, N. Y., Director of Chapters, National Foundation for Infantile Paralysis

A.P.H.A. membership application blank on page XXXIII

SCHOOLS OF PUBLIC HEALTH ACCREDITED FOR 1952–1953

Following the action of the Executive Board of the American Public Health Association on April 24, 1952, on recommendation of the Committee on Professional Education, eleven schools of public health are accredited for the degree of Master of Public Health (M.P.H. in the United States, Diploma of Public Health or D.P.H. at the University of Toronto). Nine of the schools are accredited also for the degree of Doctor of Public Health (Dr.P.H.). Five are accredited for master's degrees other than the M.P.H., with specialization in public health education.

The schools accredited for the academic year 1952–1953 with the types of degrees for which they are accredited and the names of the deans or directors are listed as follows:

Institutions Accredited by the American Public Health Association for the Academic Year 1952–1953

Institution	Degrees for which Accredited		
	Master of Public Health (M.P.H.)	*Doctor of Public Health (Dr.P.H.)*	*Master's Degree in Public Health Education other than the M.P.H.*
CALIFORNIA, UNIVERSITY OF School of Public Health Berkeley 4, Calif. C. E. Smith, M.D., Dean	X	X	
COLUMBIA UNIVERSITY School of Public Health New York 32, N. Y. H. W. Brown, M.D., Director	X	X	X
HARVARD UNIVERSITY School of Public Health Boston 15, Mass. J. S. Simmons, M.D., Dean	X	X	X
JOHNS HOPKINS UNIVERSITY School of Hygiene and Public Health Baltimore 5, Md. E. L. Stebbins, M.D., Director	X	X	
MICHIGAN, UNIVERSITY OF School of Public Health Ann Arbor, Mich. H. F. Vaughan, Dr.P.H., Dean	X	X	
MINNESOTA, UNIVERSITY OF School of Public Health Minneapolis 14, Minn. G. W. Anderson, M.D., Director	X		X
NORTH CAROLINA, UNIVERSITY OF School of Public Health Chapel Hill, N. C. E. G. McGavran, M.D., Dean	X	X	X
PITTSBURGH, UNIVERSITY OF Graduate School of Public Health Pittsburgh 13, Pa. Thomas Parran, M.D., Dean	X	X	
TORONTO, UNIVERSITY OF School of Hygiene Toronto 5, Ontario, Canada R. D. Defries, M.D., Director	X[1]		
TULANE UNIVERSITY Department of Public Health New Orleans 13, La. M. E. Lapham, M.D., Dean	X	X	
YALE UNIVERSITY Department of Public Health New Haven, Conn. Ira V. Hiscock, Sc.D., Chairman	X	X	X

[1] Diploma in Public Health, D.P.H.

ADVANCE REGISTRATION

FOR 80TH ANNUAL MEETING

AMERICAN PUBLIC HEALTH ASSOCIATION

CLEVELAND, OHIO, OCTOBER 20–24, 1952

Members and Fellows of the American Public Health Association and other health workers who are not members who wish to register in advance for the Cleveland Annual Meeting are cordially invited to do so. (NOTE: This year the Registration Desk will be located outside the exhibit hall at the entrance to the Auditorium. Admission to the exhibit area and meeting rooms will be only by display of the official badge. Advance registration will speed your receipt of the badge.)

Each person should fill in the coupon below or a facsimile thereof and mail it with the registration fee to the Central Office. We will prepare for your attendance in advance and you can then pick up your program and badge without delay at a special section as soon as you arrive at Registration Headquarters in the Public Auditorium. At that time your registration will have been recorded and it will only be necessary for you to supply your local hotel and room number to complete the registration procedure. If you know now at which hotel in Cleveland you will be staying, please add this information below.

Advance registrations cannot be accepted and recorded if received in Central Office after October 1, 1952.

Return to American Public Health Assn.,
1790 Broadway, New York 19, N. Y.

I wish to register in advance for the Cleveland Annual Meeting.

NAME .....

BUSINESS ADDRESS .....

CITY & STATE .....

TITLE OF POSITION .....

HOTEL IN CLEVELAND .....

Nonmember of A.P.H.A. Registration fee $4. ☐

Member of A.P.H.A. Registration fee $3. ☐

Fellow of A.P.H.A. Registration fee $3. ☐

Please send check or money order for amount shown

If you will be accompanied by your wife (or husband) or other dependent member of your family who is entitled to free registration, please list the name and address below:

NAME .....RELATIONSHIP TO DELEGATE .....

STREET ADDRESS .....CITY & STATE .....

80TH ANNUAL MEETING

Cleveland, Ohio, October 20–24, 1952

A HOUSING BUREAU has been organized for the 80th Annual Meeting of the A.P.H.A. in Cleveland, October 20–24. Since all requests for rooms are handled in chronological order, it is recommended that you send in your application as quickly as possible.

These rates are subject to change at any time. The list includes some residential hotels which may not have rooms available for conventions at all times.

PLEASE COMPLETE THE APPLICATION FORM ON PAGE 889 GIVING *ALL* INFORMATION REQUESTED.

HOTELS HOLDING ROOMS FOR A.P.H.A. AND RATES *

Hotel	*Single*	*Double*	*Twin-Bedded*
Alcazar Hotel	$6.50–8.00	$8.50–10.00	$ 8.50–12.00
Allerton Hotel	4.00–7.00 3.50 RW	6.50– 9.00	7.00–10.00 5.50 RW
Auditorium Hotel	4.00–7.00	6.00– 9.00	8.50– 9.50
Belmont Hotel	3.25–3.50	5.00– 5.75	4.25– 6.25
Bolton Square Hotel	3.50–5.00	5.50– 7.00	6.00– 7.50
Carter Hotel	4.00–7.50	6.00–10.00	8.00–12.00
Cleveland Hotel	4.50–8.00	7.00–10.00	10.00–15.00
Commodore Hotel	6.00–7.50	8.00–10.00	8.50–12.00
Hollenden Hotel	4.00–8.00	6.00–12.00	8.00–15.00
Lake Shore Hotel	5.00 up	8.00 up	8.00 up
New Amsterdam Hotel	3.00–4.00	5.50– 6.00	6.00– 7.00
Olmsted Hotel	3.75–6.00	6.50– 9.00	7.50– 9.50
Park Lane Villa	5.00	6.00	7.00– 8.00
Quad Hall Hotel	3.00–6.00		6.00–10.00
St. Regis Hotel	3.00–4.00	5.00– 8.00	5.00– 8.00
Sovereign Hotel	5.00–6.00	6.00–10.00	6.00–12.00
Statler Hotel	4.50–9.00	7.50–10.50	9.00–14.00
Stockbridge Hotel	3.00	5.00	6.00
Tudor Arms Hotel	4.50 up		7.00 up
Wade Park Manor	5.50 up	7.50 up	8.50 up
Westlake Hotel	5.00–6.00	8.00– 9.00	9.00

* Parlor suites available. Rates on request.

SCIENTIFIC EXHIBITS AT THE CLEVELAND ANNUAL MEETING

The Committee on Scientific Exhibits is accepting applications for scientific exhibit space at the 80th Annual Meeting. Health departments, schools of public health, and voluntary agencies are invited to participate. Individual research projects may also be exhibited.

Applications for space may be obtained from the Association Office—1790 Broadway, New York 19.

HOTEL RESERVATION FORM

MAIL TO: Mrs. Louise D. Perkins, Director
A.P.H.A. Housing Bureau
511 Terminal Tower
Cleveland 13, Ohio

Single rooms are very scarce. Please indicate if you would be willing to share a twin-bedded room with another member.
Yes ..... No. .....

PLEASE MAKE RESERVATIONS NOTED BELOW: (Please print or type.)

First Choice ..... Hotel Arrival: ....., at ..... a.m. ..... p.m.

Second Choice ..... Hotel Departure: ....., at ..... a.m. ..... p.m.

Third Choice ..... Hotel

..... Single room @ $ .... Twin-bedded room @ $ .....

..... Double room @ $ .....

NAMES OF ALL OCCUPANTS: *ADDRESSES:*

.....

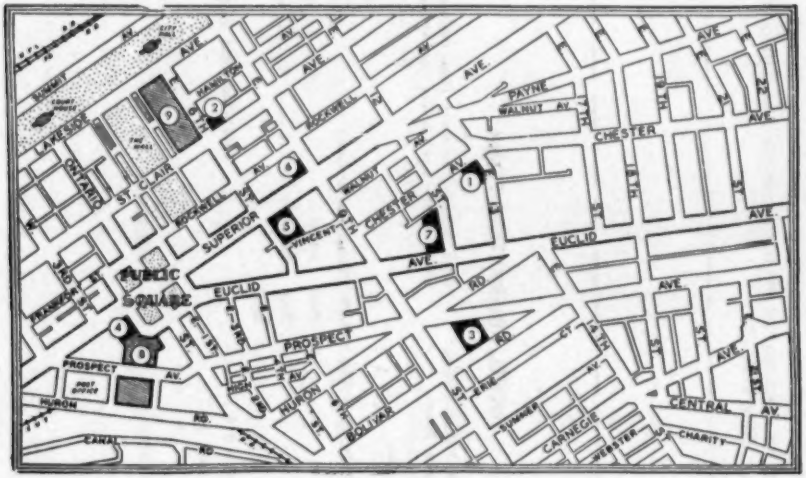
.....

.....

MAIL CONFIRMATION TO: Signed: .....

Address: .....
City Zone State

Street Plan of Cleveland Showing Location of Housing Bureau Hotels



Key

1. Allerton Hotel
2. Auditorium Hotel
3. Carter Hotel
4. Cleveland Hotel
5. Hollenden Hotel
6. Olmsted Hotel
7. Statler Hotel
8. Union Station—Terminal Tower
9. Public Auditorium

Hotel Reservation form is on the reverse side. Please indicate your first, second, and third choice hotel. Single rooms are limited.

All reservations will be confirmed if requests are received not later than October 10.

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Chief, Tuberculosis Service—in modern, progressive, approved 400-bed hospital predominantly for tuberculosis. Need top-notch leader with knowledge of latest therapy and ability to direct full medical staff as well as utilize a fully-equipped and well-staffed research laboratory. Salary depends on qualifications and experience. Automatic promotions. Thirty days paid annual leave and paid sick leave; retirement and disability compensation systems. Excellent working conditions. Nice community. Write: P. O. Box 935, Legion Branch, Kerryville, Tex.

Medical Positions—**Field Director** to supervise local health work in 40 counties, salary up to $11,000. **Chief of the Bureau of Preventive Medicine,** salary up to $11,500. **Medical Consultant** for heart disease control program, salary up to $8,500. **Local Health Officers,** salaries up to $7,200. All positions are for 5-day week and are under the Merit System. Additional allowance for travel. Actual salary depends upon training and experience. Write: Bruce Underwood, M.D., Commissioner of Health, Kentucky State Dept. of Health, 620 S. 3rd St., Louisville 2, Ky.

Health Officer—for newly created Egyptian Health Department located in the "Little Egypt" section of southern Illinois and serving the counties of Gallatin, Saline, and White. Population 64,173. Position open at once. Candidate should be prepared to create and maintain a good program of local health services and should have capacity for excellent public and human relations. Salary up to $11,000 depending on experience and training. Write: Horace Brown, Secretary, Egyptian Board of Health, Shawneetown, Ill.

There are several vacancies for qualified **Health Officers** in Texas. Entrance salary up to $8,400 per year, plus $600 per year for car allowance. Write: George W. Cox, M.D., State Health Officer, State Dept. of Health, Austin, Tex.

Four **Health Officers**—Salaries up to $7,200 for untrained men; up to $10,800 for trained experienced men. Write: N. H. Dyer, M.D., State Director of Health, Charleston 5, W. Va.

Associate Professor—for Department of Preventive Medicine and Public Health, Medical College of Alabama. Man, under 45, to assume major responsibility of instruction. Clinical background desirable; practical experience in public health necessary. Opportunity for research. Close liaison with Public Health Dept. Salary approximately $7,500. Write: Dr. Geo. A. Denison, Chairman, Box 2591, Birmingham, Ala.

Supervising Dentist—Dental health program, health division. Salary $491.70–$544.50. Entrance salary at minimum figure or higher if necessary to secure candidate. Necessary qualifications: D.D.S. degree from an accredited dental school; licensure or eligibility for licensure to practice dentistry in Missouri. A Master's degree in Public Health in dentistry from an accredited school of public health. Three years of progressively responsible experience in a public health dental program, including at least one year in an administrative or supervisory capacity. Competitive Civil Service examination now open only to male citizens of the United States. Write: Dept. of Personnel, Room 235, Municipal Courts Building, 14th and Market Sts., St. Louis 3, Mo.

Dental Hygienist—for public health dental program in city of 60,000. Excellent working conditions. Variety of duties, including sodium fluoride, health education, and clinical dental hygiene. Salary $3,000. Direct inquiries: City-County Health Dept., 241 W. South St., Kalamazoo, Mich.

Dental Hygienists—positions available on dental hygiene faculty: (1) full-time instructor, (2) part-time instructorship combined with study toward B.S. Degree. Write: University of Alabama, School of Dentistry, Dept. of Dental Hygiene, University Medical Center, Birmingham 5, Ala.

Public Health Educator—Beginning salary $4,195 per annum advancing to

$4,795 per annum. Applicants must have a Master's degree in Public Health Administration or other appropriate field. Maximum age 50. Training and experience examination only. Write: City Service Commission, City Hall, Milwaukee, Wis.

Industrial Hygienist—Splendid opening for an experienced chemical or mechanical engineer. Salary $5,048–$6,272. Liberal vacation, sick leave, and retirement. Ideal working conditions. Write: Personnel Officer, State Health Dept., Richmond 19, Va.

Sanitarian—for work in a rural community. Some experience or knowledge of procedure required. Most necessary is a willingness to meet and work with people on a friendly basis. Salary to start about $3,000; travel $85 per month. Write: Preston E. Wright, M.D., Golconda, Ill.

Sanitary Engineer—Trained, experienced sanitary engineer desired to direct all sanitation programs in the state as director of the Bureau of Environmental Health. Salary open, depends upon training and experience. **Assistant Director,** Division of Public Health Engineering. Write: Bruce Underwood, M.D., Commissioner of Health, 620 S. 3rd St., Louisville 2, Ky.

Nurse—for Hardin County; a good place to work. Salary from $2,200–$2,500, depending on qualifications. If certified public health nurse, salary $2,600–$3,000. Travel $65 per month. Write: Preston E. Wright, M.D., Golconda, Ill.

Public Health Nurses—Generalized program in suburban area. Staff education and student program. Five-day week, vacations, sick leave, and retirement benefits. Write: Jack H. Foster, Personnel Director, The Court House, Arlington, Va.

Public Health Nurse—with certificate for a generalized program in both urban and rural communities of the San Francisco Bay area. Salary $291 per month to a maximum of $356 in 5 years. Forty hour, 5-day week, retirement plan, sick leave. Write: Director of Public Health Nursing, Alameda County Health Dept., 576 Callan Avenue, San Leandro, Calif.

Public Health Nurses—for city-county generalized program and participation in university student field educational program. Personnel policies include 15 working days each of sick and vacation leave annually, accumulative to 30 days; 11 holidays; Social Security benefits, and hospital and medical plan available. Salary commensurate with education and qualifications. Mileage allowance 8¢ per mile for use of own car. Write: Weld County Health Dept., Greeley, Colo.

One-Nurse-County—Opportunities now in Oregon in Grant, Gilliam-Wheeler, Columbia, and Union counties. Professional stimulation and inservice training available by conference, institutes, assistance of state consultants. Requirements: public health training and two years experience. Starting salaries $300–$325. Write: Director of Public Health Nursing, Oregon State Board of Health, 1400 S.W. Fifth, Portland 1, Ore.

Public Health Nursing Supervisor—to direct a staff of five in the Health Dept. and three I.V.N.A. nurses. Annual salary $3,500 with annual increments of $120.00 per year up to $3,980. Travel reimbursement 6½¢ a mile. Write: S. D. Sturkie, M.D., Director, Joint Health Dept., Charlottesville, Va.

Supervising Nurse—for visiting nurse organization with 6 staff nurses and student program covering an area with approximately 60,000 population. Preparation and experience which meet NOPHN standards required. Salary open; one month vacation; 2 weeks sick leave; retirement plan; mileage allowance. Write: Director, Elmira Visiting Nurse and Tuberculosis Association, Elmira, N. Y.

Public Health Staff Nurse—for generalized program in county of 40,000 population. Well established unit with a staff of 7 nurses. Established field training center for the State Dept. and Vanderbilt University. Beginning salary for senior public health nurse $245 per month, liberal increases. Annual and sick leave. State merit and retirement plan. Travel allowance or can provide automobile for one year. Write: R. D. Hollowell, M.D., Director of Rutherford County Health Dept., Murfreesboro, Tenn.

Senior Public Health Nurse—for staff position, progressive urban service, salary $3,300–$3,600, travel $60 per month, five day week, two weeks vacation, sick leave, excellent retirement benefits. Write: Olivia Smythe, R.N., Director, Division of Public Health Nursing, Dallas, Tex.

Public Health Staff Nurse—Progressive voluntary agency in process of expansion. Five-day week, excellent personnel policies, salary based on education and experience. Write: Dr. Bernard M. Blum, Director, The Fife-Hamill Memorial Health Center, 7th and Delancey Sts., Philadelphia, Pa.

Registered and Public Health Nurses—needed for staff positions in the Visiting

Nurse Association. Good personnel policies: 5-day week, one months' vacation, retirement plan, Social Security, and educational program. Beginning salary for registered nurse, without public health nursing experience or education: $3,200; beginning salary for public health nurses $3,440. University facilities available for professional study. Write: Ruth E. Telinde, Executive Director, Visiting Nurse Association, 1038 N. Cass St., Milwaukee, Wis.

Physical Therapist—female, registered for physical therapy service in homes, also physical therapy clinics working closely with orthopedic treatment clinics and diagnostic clinics. Present salary $4,340 (including flat car allowance). Car is necessary. Other benefits include two weeks annual sick leave which is accumulative to 90 days, 3 weeks annual vacation, and a retirement plan. Write: R. L. Loftin, M.D., Bay County Dept. of Health, Bay County Building, Bay City, Mich.

POSITIONS WANTED

Woman Physician—with M.P.H., pediatric training and long experience in school health work, desires position with school system of small city on either coast. Work must include clinical activities. Write: **Box PH-30**, Employment Service, A.P.H.A.

Bacteriologist-Serologist—desires career with a state public health laboratory with opportunities for advancement. Age 35, married. B.S. Biology. Four years hospital laboratory work; 2 years medical research; 3 years general sanitation and public health laboratory. Write: **Box S-13**, Employment Service, A.P.H.A.

Health Educator—M.S.P.H. Two years experience with voluntary health agency includes community organization, survey work, and the production of mass media. Three years additional experience as case and group worker. Age 29, married, male. Write: **HE-44**, Employment Service, A.P.H.A.

All communications should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

OPPORTUNTIES WANTED

WANTED—Opportunities for group of well qualified Public Health Physicians and Dentists, Public Health Nurses, Health Educators, Statisticians, Sanitary Engineers and Laboratory Workers. Candidates available for administrative, academic and staff appointments. All negotiations strictly confidential. Please outline your requirements and credentials of qualified candidates will follow. THE MEDICAL BUREAU (Burneice Larson, Director) Palmolive Building, Chicago.

OPPORTUNITIES AVAILABLE

WANTED—Public Health Physicians and Dentists, Health Educators, Public Health Nurses, Nutritionists, Public Health Laboratory Personnel, Sanitary and Industrial Engineers for administrative, academic and staff appointments. Opportunities in all parts of America including countries outside continental United States. All negotiations strictly confidential. Please send for our ANALYSIS FORM so that we may prepare an individual survey of opportunities in your particular field. THE MEDICAL BUREAU (Burneice Larson, Director) Palmolive Building, Chicago.

NEWS FROM THE FIELD

CERTIFICATION IN AVIATION MEDICINE

The following report of negotiations has been released by Ernest L. Stebbins, M.D., Secretary of the American Board of Preventive Medicine, Inc.

At the request of the Interim Board on Aviation Medicine and with the encouragement of the Advisory Board for Medical Specialties, the American Board of Preventive Medicine and Public Health has given consideration over the past 18 months to the possibility of association of preventive medicine and aviation medicine as a specialty certifying board. After numerous joint conferences of the members of the Interim Board in Aviation Medicine and the American Board of Preventive Medicine and Public Health, a proposed affiliation was developed. Under the terms of this proposal, the American Board of Preventive Medicine and Public Health would become the American Board of Preventive Medicine, sponsored, in addition to the sponsorship of the original Board, by the appropriate professional associations in aviation medicine. Under this reorganization, it was proposed that candidates might be examined and certified in either (a) public health or (b) aviation medicine, the standards for examination and certification in public health to remain essentially as at the present time, while the standards for examination and certification in aviation medicine to be such as to meet the basic standards established by the Advisory Board for Medical Specialties. The proposed special training to be required in aviation medicine for eligibility for examination were as follows:

1. Successful completion of two academic years of graduate study in (a) the elements of preventive medicine, (b) the basic sciences applicable to aviation medicine, and (c) aviation medicine, at least one academic year of which study is to be pursued in a school, college, or university accredited for the purpose of such graduate study by the Council on Medical Education and Hospitals of the American Medical Association or by the American Public Health Association.

2. At least one year of approved residency training in aviation medicine.

3. A minimum of six years of academic training, residency training, or practical experience in aviation medicine subsequent to the intern year, which includes 1 and 2 above.

This proposal was reviewed by the Advisory Board for Medical Specialties at its meeting on February 10, 1952. After hearing the proposal as presented by the representatives of the American Board of Preventive Medicine and Public Health and by the Interim Board of Aviation Medicine, the Advisory Board for the Medical Specialties voted to disapprove the proposal at the present time for the following reasons:

1. There are at the present time only two training centers where acceptable training in aviation medicine can be obtained, both of which are military. There are no civilian training centers in aviation medicine at this time.

2. The specialized training requirements as previously outlined were not sufficiently defined, nor was there adequate assurance of qualified supervision.

3. There was objection to the restriction of applicants for examination to members of a single medical group such as the Aero Medical Association.

After further discussion, it was unanimously voted that the Advisory Board for Medical Specialties approve in principle the proposal made by the American Board of Preventive Medicine and Public Health and the Interim Board of Aviation Medicine, but that no certificates be issued in aviation medicine until such time as the previously outlined deficiencies in the training program

in aviation medicine be adequately corrected and brought back to the Advisory Board for Medical Specialties for approval.

In accordance with this action, the American Board of Preventive Medicine and Public Health amended its articles of incorporation and by-laws, changing the name of that Board to the American Board of Preventive Medicine, and provision was made for additions to the Board membership representing aviation medicine. Otis O. Benson, Jr., M.D., was elected vice-chairman of the Board of Preventive Medicine, representing aviation medicine, and Jan H. Tillisch, M.D., was elected to membership on the Board and was named chairman of the Standards and Examination Committee for Aviation Medicine. Since the February meeting, the Interim Board of Aviation Medicine has received proposals from three universities for the development of specialized training programs in aviation medicine. Plans and facilities for both military and civilian residency training programs have been developed. It is hoped that an application for approval of these residency training programs can be submitted to the Council on Medical Education and Hospitals of the American Medical Association in the near future. It should be emphasized that no certification in aviation medicine is contemplated until such time as the Advisory Board for Medical Specialties indicates approval of the training facilities that are being developed.

MIDDLE STATES PUBLIC HEALTH ASSOCIATION MEETS

For its Third Annual Meeting, the Middle States Public Health Association met with the Wisconsin Association for Public Health in Milwaukee, April 7 to 9. The registered attendance was 640.

Gaylord W. Anderson, M.D., president, APHA, spoke at a general session on Basic Training for Career Service in Public Health.

At the first general session the principal address, entitled On the Horizon of Public Health, was presented by Leonard Scheele, M.D., surgeon general of the Public Health Service. The papers given at the second general session included Child Health in the Old World and New, The Public Health Nurse as a Family Counselor, and The Health Officer Turns to Trained Administrators for Help. Additional sessions were held by each of the seven sections.

The new President is William J. Downer, assistant chief sanitary engineer, Division of Sanitary Engineering, State Department of Public Health, Springfield, Ill.; the newly-elected President-Elect is Robert N. Barr, M.D., deputy executive officer and chief, Section of Special Services, State Department of Health, Minneapolis, Minn.; Leonard C. Murray, Ph.D., state director, Division of Public Health Education, State Department of Health, Des Moines, Iowa, was reëlected Secretary-Treasurer.

The 1953 Annual Meeting will be held jointly with the Kansas Public Health Association in Topeka, Kans., April 13 to 15.

THE FIRST TEN YEARS

The Public Health Research Institute of the City of New York, Inc., celebrated its 10th anniversary on April 21, 1951. Although a municipal laboratory, it is a private nonprofit agency which receives substantial financial support from other than tax funds. The city has a contract with the Institute whereby, in return for a fixed sum annually plus suitable laboratory space and maintenance, the Institute carries on research and investigation related to the various problems of public health.

The Institute's history goes back to 1893 when Hermann Biggs, M.D., New York City's health commissioner and William Hallock Park, M.D., director of the Bureau of Laboratories, won fame

with their work in diphtheria. By 1936 Health Research, Inc., was organized by a group of workers in research institutions and medical schools; by 1942 it became the present Institute.

Among the new developments during the 10 year history of the Institute were large-scale vaccinations of dogs against rabies which was later made compulsory; a special preparation of penicillin for prolonged action; pioneering in triple vaccine for pertussis, diphtheria, and tetanus; establishment of Rh and virus diagnostic laboratories; isolation of the "cord factor" from tubercle bacilli, and others.

The director of the Institute is L. W. Gorham, M.D., Foot of East 15th St., New York 9, N. Y.

LUNG CANCER AND SMOKING

The American Cancer Society, in cooperation with nine of its state divisions, has undertaken a survey to determine whether or not smoking is a contributing factor in the development of lung cancer. Volunteers of the Cancer Society's Field Army are collecting data on the smoking habits of white males between the ages of 50 and 69. Each volunteer is asked to get questionnaires filled out for about 10 persons—relatives, close friends, and neighbors, made up both of smokers and nonsmokers. An annual follow-up will report on whether the man is still alive, or if dead, the time and place of death. Determining cause of death from death certificates or other sources will then be the responsibility of the medical committee of the local or state division of the Society.

The Research Section of the American Cancer Society will study the information regarding illness or death and smoking history. A number of studies in recent years have indicated a positive correlation between smoking history and lung cancer. This study was undertaken because the Society feels the evidence is not conclusive and because there has been a striking increase in the lung cancer death rate for this age group. At the same time, there has been a steadily increasing per capita consumption of cigarettes.

The states in which the Society's divisions are coöperating in the study are: California, Illinois, Iowa, Michigan, Minnesota, New Jersey, New York, Pennsylvania, and Wisconsin.

SAFETY FILM AWARDS

The annual "outstanding accident prevention films" have been chosen by the National Committee on Films for Safety. Five motion pictures and one slide film were selected as "outstanding," eight additional films were given honorable mention, and fourteen merit awards.

Among nontheatrical motion pictures, there were three winners—one each in the general, occupational, and traffic and transportation fields. They are:

Pipeline on Wheels by Apex Film Corporation for E. I. du Pont de Nemours & Company, and Tony Learns About Fire by Southern Educational Film Production Service for National Board of Fire Underwriters, which tied as winners in the general field.

The Story of Pierre and Marie by Crawley Films Ltd., for Quebec Pulp and Paper Safety Association in the occupational field.

Day in Court produced by Cate and McGlone for International Harvester Company in the traffic and transportation field.

In these three fields there were also four honorable mentions and seven awards of merit, together with two awards of merit in the home safety field.

Among theatrical motion pictures, the winner, which also received the David S. Beyer Memorial Award of the Liberty Mutual Insurance Co., was Motor Mania by the Walt Disney Studio.

The sound slide film winner was Pattern for Tragedy by Paragon Pictures for Zurich-American Insurance Companies. There were three each of honorable mentions and awards of merit for slide films.

The National Committee on Films for Safety, sponsored by the National Safety Council, represents numerous national organizations. Among them is the American Public Health Association, represented by H. E. Kleinschmidt, M.D.

PENNSYLVANIA'S HEALTH CONFERENCE

The Pennsylvania Health Department is sponsoring an annual health conference. In 1952, it will be held August 25–28 at Pennsylvania State College, State College, Pa. Two half days of general sessions and two full days of section sessions make up the program.

The second general session on the morning of August 28 will be "A Symposium on Public Health in Pennsylvania" in which the discussants will be drawn largely from State Health Council members who have been active in the reorganization of the state's health services. These include I. Hope Alexander, M.D., president of the Pennsylvania Public Health Association and George S. Klump, M.D., member of the State Medical Society's Commission on Public Health and Preventive Medicine. Reginald M. Atwater, M.D., executive secretary of the American Public Health Association, will summarize this session.

Room and meals will be provided at the College for about $4.75 per day. Further information and reservations: Karl F. Mason, director, Office of Professional Training, Pennsylvania Department of Health, Harrisburg, Pa.

CINCINNATI PROTESTS BUSH HEALTH LECTURE

The Cincinnati Public Health Federation, with J. Stewart Mathews, M.D., as president, has protested to Cincinnati papers the publication of remarks attributed to David V. Bush, recently presented in Cincinnati after the lectures had previously been advertised in the papers. According to this protest, Bush stated that he would tell those who attended his paid lectures, scheduled to follow the free series, how to cure syphillis with water. He also implied that gangrene could be cured by running water. His dietetic advice in some respects could not be supported with facts.

Dr. Mathews points out that the Public Health Federation expends considerable effort in trying to give sound health information and advice to the public and that contrary information makes the task very much harder.

This information is published at the request of Bleecker Marquette, executive secretary of the Public Health Federation, because of its possible significance to other cities.

CANCER SYMPOSIUM IN TEXAS

The Sixth Annual Symposium on Fundamental Cancer Research, sponsored by the University of Texas, M. D. Anderson Hospital for Cancer Research, was held in Houston, April 25 and 26. About 300 persons from 22 states and Mexico attended this joint meeting with the South Central Region College of American Pathologists, and the Texas and Houston Societies of Pathologists. The meeting was divided into three major sections: a panel on nutritional factors in cancer research, a cancer pathology and radiology conference, and a session devoted to fundamental cancer research.

The annual Bertner Foundation Award was presented posthumously to Dr. George Milton Smith in recognition of his lifetime achievements as an organizer and administrator of cancer research. The annual Bertner Lecture was given by Dr. Stanhope Bayne-Jones of New York Hospital-Cornell Medical Center on "Aspects of Cancer Research in the United States."

The Jesse H. Jones Fellowships in Cancer Education were awarded to Dr. Robert J. Peace for advanced study in pathology at the M. D. Anderson Hospital, and to Dr. Franklin T. Brayer

for study in experimental medicine at the Memorial Hospital for Cancer and Allied Diseases, New York, N. Y.

REHABILITATION SCHOLARSHIP

A $1,000 scholarship for a medical social worker specializing in rehabilitation of the crippled has been established jointly by the National Society for Crippled Children and Adults and the Kappa Delta Phi, professional education fraternity. The grant will be given for a course of instruction in the University of Chicago's School of Social Service Administration, which will vary the course to meet the student's needs.

Eligibility requirements are:

1. An A. B. degree plus one year in an accredited school of social work, including casework field work requirements.
2. Three years of supervised casework experience.
3. Demonstrated evidence of interest in working in programs for crippled children.

Candidates must submit with the application a letter explaining the reasons for applying for the scholarship and also be interviewed by a reviewing committee. Applications forms from:

National Personal Registry and Employment Service, and the National Society for Crippled Children and Adults, 11 S. La Salle St., Chicago 3, Ill.

HEART ASSOCIATION'S FOUR AWARDS

Four Gold Heart Awards were presented at the annual dinner of the American Heart Association in Cleveland in April. The awards, the highest honor of the Association, are given annually for outstanding contributions in the cardiovascular field and in furthering the Association's program.

The 1952 winners are:

A. W. Robertson, director, Westinghouse Electric Corporation and chairman of the Association's Finance Committee for his personification of the "advantages gained by admitting lay leaders into the councils of the Association."

Carl J. Wiggers, M.D., director, Department of Physiology, Western Reserve School of Medicine for, among other activities, "his work in fundamental physiology of the circulation that provides a basic background for much of today's current clinical investigation."

Robert L. Mehornay, posthumously for his services as "one of the first small group of nonmedical members added to the Association's Board of Directors" and "participation actively in the Missouri Heart Association."

Mrs. Albert D. Lasker, cofounder of the Albert and Mary Lasker Foundation, for "her awareness of the urgency for greater recognition of financial aid to doctors and scientists working through medical research to prolong life."

WHO NEWS

Doctors and Death Certificates

WHO has provided a useful booklet called *Medical Certification of Cause of Death*. It is simply and well written. It provides instructions for physicians on use of the medical certification of the cause of death. Since this country has adopted the international system of classification of causes of death the booklet is directly applicable. It will be useful in all vital statistics offices; in training programs in nosology, and particularly in assisting young physicians, and in programs of querying by mail. The table of obscure terms is outstanding.

Fifth World Health Assembly

The Fifth World Health Assembly met in Geneva May 5–24, with representatives of 63 member nations present. Dr. Juan Salcedo, Jr., secretary for health in the Philippines, was elected president, succeeding Leonard A Scheele, surgeon general of the U. S. Public Health Service. The chief delegates from Switzerland, Haiti, and Liberia were elected vice-presidents. Brazil, Canada, Denmark, Iran, New Zealand, and the United Kingdom were elected to appoint experts to serve on the Executive Board. Libya was unanimously elected as the 80th member of WHO,

and Morocco and Tunisia were elected associate members. A budget of $8,485,095 for 1953 was recommended, representing an increase of 10 per cent over the 1952 budget.

In his presidential address, Dr. Salcedo warned against the indiscriminate advertising in the lay press of the so-called "wonder" drugs, suggesting that national health administrations insure against premature publication of future alleged cures and limit advertising concerning them to scientific and allied journals.

In his report the director general, Brock Chisholm, M.D., indicated that the process of decentralization begun in 1949 is now completed. Thus, the work of the organization is being fitted to the specific needs of individual countries and their economic and social conditions. Experience has proved that modern methods of promoting health and combating disease are useful only if their application is adjusted to widely differing stages of social, cultural, educational, and institutional development.

Dr. Chisholm reported an increasing recognition of the vital importance of promoting education and training at all levels. Thus, WHO greatly expanded its training services during 1951.

Disease control activities, begun through internationally organized teams, have in instance after instance been taken over by the governments concerned and with the overwhelming support of the people. Not only do well planned and well organized public health services contribute to health improvement but affect economic development favorably as well. The most striking evidence of this is the substantial United Nations technical assistance funds that have been allocated to WHO for health work.

Because technical assistance programs in less developed countries were often hampered by malaria and other diseases and poor sanitation, President Salcedo suggested recommending to member governments high priority to health problems in relation to economic development. In some instances, also, the financial burden of governments participating in these programs should be eased; they sometimes hesitate to request assistance because of inability to meet their own expected share in the projects.

Pan American Sanitary Bureau, 1953

The Executive Committee of the Pan American Sanitary Bureau, meeting in Washington in April, recommended a budget of more than two million dollars for 1953 health activities, an increase of about six per cent over the 1952 budget.

Among the further recommendations made which will be acted upon by the Directing Council that will meet in September, just previous to the Inter-American Congress of Public Health in Havana, are:

1. A 1953 emphasis on environmental sanitation programs.
2. Publication of a Spanish translation of a textbook on public health administration.
3. Continued Bureau assistance in Peru's smallpox campaign and beginning of smallpox vaccination campaigns in Ecuador and Bolivia.
4. Provision of funds for technical advisory services and insecticides for a Chagas' Disease eradication program in 1953.
5. Assistance to the Venereal Disease Laboratory in Caracas, Venezuela, and the VD Training Center in São Paulo, Brazil, and continued participation in the yaws eradication campaign in Haiti.
6. Continuation of funds to the Carlos Finlay Institute of Colombia, the Oswald Cruz Institute and National Yellow Fever Service of Brazil for their pathological, serological, diagnostic, and yellow fever vaccine services to other American countries.

World Poliomyelitis Incidence

The world incidence of poliomyelitis was reviewed in the Vol. V, No. 3, March, 1952, *Epidemiological and Vital Statistics Report*. It shows an appreciable decrease from 1950 in a number of countries including the United States and Europe. Exceptions in Europe were

Holland, Italy, Norway, and Switzerland.

The report stresses the "omnipresence of the poliomyelitis viruses," namely that they are now known to exist in every country, and not merely in temperate and cold countries as formerly believed. Furthermore, in the tropical countries epidemics may occur and, in fact, are relatively frequent at any time of the year.

Citizens Committee Adds Members

The U. S. National Citizens Committee for WHO in April brought the membership of its Steering Committee up to 19 persons. Organized in the fall of 1951, the purpose of the Citizens Committee is to make the public generally aware of the work of WHO and the importance of health programs to the peace of the world. It plans public meetings at which the work of WHO can be discussed, particularly with members of U. S. delegations to WHO. It will distribute educational material and develop other avenues of public discussion and understanding. Now being distributed are 10,000 copies of its first publication, *International Health*, in which are included the addresses given at the Special World Health Session of the 79th Annual Meeting of the American Public Health Association in San Francisco in November, 1951.

The Citizens Committee was organized and is staffed by the National Health Council. Chairman of the Steering Committee is Frank Boudreau, M.D., executive director of the Milbank Memorial Fund. Other members are:

Reginald M. Atwater, M.D., executive secretary, American Public Health Association
Louis H. Bauer, M.D., president-elect, American Medical Association
William M. Chadbourne, attorney, Chadbourne, Hunt, Jaeckel & Brown
A. W. Dent, Ph.D., president, Dillard University
Albert Deutsch, writer
Clark M. Eichelberger, director, American Association for the United Nations
Haven Emerson, M.D., professor emeritus of public health practice, Columbia University
Harold Hillenbrand, D.D.S., secretary, American Dental Association
Philip R. Mather, president, American Social Hygiene Association
Thomas Parran, M.D., dean, Graduate School of Public Health, University of Pittsburgh
James E. Perkins, M.D., managing director, National Tuberculosis Association
Howard A. Rusk, M.D., associate editor, New York *Times*
Marion W. Sheahan, R.N., National Committee for the Improvement of Nursing Services
James T. Shotwell, Ph.D., president emeritus, Carnegie Endowment for International Peace
Ernest L. Stebbins, M.D., director, School of Hygiene and Public Health, Johns Hopkins University
George S. Stevenson, M.D., medical director, National Association for Mental Health
C.-E. A. Winslow, Dr.Ph.H., editor, *American Journal of Public Health;* professor emeritus of public health, Yale University
Abel Wolman, Dr. Eng., Johns Hopkins University.

PERSONALS

VERA ADAMS, U. S. Public Health Service nurse officer, has been assigned to the staff of the Alaska Health Department's Health Center in Juneau.

JAMES R. AMOS, M.D.,† formerly health officer Greene County Health Department, has been appointed director of the Missouri Division of Health, succeeding BUFORD HAMILTON, M.D.,† deceased.

OTIS L. ANDERSON, M.D.,† associate chief, Bureau of Medical Services, U. S. Public Health Service, Washington, has been appointed chief, Bureau of State Health Services, to succeed JOSEPH W. MOUNTIN, M.D.,* deceased. Dr. Anderson is an assistant surgeon general.

ROY A. ANDUZE, M.D., is the newly appointed commissioner of health for the Virgin Islands and chief, Municipal Physician for St. Thomas and St. John. Dr. Anduze has

* Fellow.
† Member.

been on the public health staff in St. Thomas and St. Croix since 1940 and succeeds JOHN S. MOREHEAD, M.D., who is with the Mutual Security Agency in Liberia.

VIRGINIA ARNOLD, R.N.,† chief nurse of the U. S. Public Health Service International Health Division, is in the Middle East to assist in the planning and reviewing of public health nursing programs in Point Four Missions where Public Health Service nurses are stationed.

HERMAN G. BAITY,* head of the Department of Sanitary Engineering in the University of North Carolina, has been appointed director of the newly established Division of Environmental Sanitation of WHO.

CLARA BEVERLY, U. S. Public Health Service nurse officer, left recently for Monrovia to direct the School of Nursing in the Tubman National Institute of Medical Arts, part of the Point IV Mission in Monrovia, Liberian capital and headquarters of the Mission.

EARNESTINE B. BLACKWELL, Ph.D., for 3 years director of psychiatric education at the Brown School in Austin, Tex., has been appointed consultant psychologist in the Division of Mental Health, Texas State Department of Health.

KATHERINE R. BOUCOT,* supervisor of municipal x-ray surveys, Philadelphia Department of Public Health, and director of x-ray surveys of the Philadelphia Tuberculosis and Health Association, has been named professor of preventive medicine at Woman's Medical College of Pennsylvania, Philadelphia.

ROBERT L. BROWN, M.D., previously on duty in the Army Surgeon General's Office assigned to the Armed Services Medical Material Standardization Committee, has become assistant medical director of the Armour Laboratories in Chicago.

DEAN A. CLARK, M.D.,* director of the Massachusetts General Hospital, Boston, and Chairman of the APHA Subcommittee on Medical Care, has been elected president of the New England Hospital Assembly.

R. E. COKER, JR., M.D.,* formerly health officer of Alamance County (N.C.), has been made assistant director, Local Health Division, North Carolina State Board of Health, Raleigh.

N. M. DEJARNETTE of the Water Pollution Control Division of the Georgia Department of Public Health, at the 75th annual meeting of the American Water Works Association in Kansas City in May, received the George W. Fuller Memorial Award of the Association for outstanding service in the water supply field.

ROLF ELIASSEN, D.Sc.,† professor of sanitary engineering and director of the Sedgwick Laboratories of Sanitary Science at the Massachusetts Institute of Technology, was designated by the U. S. State Department to attend the Fifth World Health Assembly in Geneva, as engineer member of the U. S. Delegation.

PAUL F. ELLIS, formerly science writer for the United Press, has been appointed vice-president in charge of the science and medicine public relations division of Reuel Estill and Company, public relations counselors of New York City.

LUIS ESPINOSA, M.D., is now director of international relations of the Finlay Institute, Ministry of Health and Social Assistance, Republic of Cuba.

HOMER FOLKS, L.L.D.,* former secretary of the New York State Charities Aid Association, was awarded the first Will Ross Medal at the meeting of the National Tuberculosis Association on May 28 in Boston "for outstanding and distinguished contributions to the tuberculosis control movement in a field other than that of the medical sciences."

THOMAS FRANCIS, JR., M.D.,* professor and chairman of the Department of Epidemiology, School of Public Health, University of Michigan, was the 1952 recipient of the Howard Taylor Ricketts Award of the University of Chicago for outstanding accomplishments in the field of virus diseases. The award was made on May 9 at a meeting at which Dr. Francis spoke on "The Significance of Variation Among Influenza Viruses."

ERNEST M. FROST,† former eastern New York State representative, National Foundation for Infantile Paralysis, has been made regional director of Region I, comprising the northeast area—12 states and the District of Columbia. Succeeding MR. FROST is JOHN G. FOERST, JR., who spent a year as an assistant state representative in eastern Pennsylvania.

MARY A. GORMLEY, former chief social worker for the Elgin State Hospital, Elgin, Ill., is now consultant to the Division of Mental Hygiene, Oklahoma State Department of Health.

RUTH GROVES, R.N., recently a nursing arts instructor in the School of Nursing, University of Kansas, and PAULINE ALLEN, R.N.,† recently supervisor of the Public Health Nursing Association at Atchison, Kans., have been appointed consultants to adult boarding homes in Kansas under a program recently worked out by joint planning of the State Department of Social

* Fellow.
† Member

Welfare and the Kansas State Board of Health.

WILLIAM M. HANRAHAN, M.D., former director of the Brevard-Osceola Bi-County Health Department in Florida, has been appointed director of the Champaign-Urbana Public Health District of Illinois.

JOSEPH HIRSH, ED.D.,* executive secretary, Medical Advisory Board of the Hebrew University and Hadassah, and consultant, Division of Medical Sciences, National Research Council, is on a 3 months medical mission to Israel concerned with the development of the Hebrew University-Hadassah Medical School and Medical Center in Jerusalem.

HARRY R. HOFFMAN, M.D., director of the mental hygiene section of the Chicago Health Department, has resigned to return to private practice as a neuropsychiatrist. He has been succeeded by IRENE C. SHERMAN, M.D., former assistant director.

G. HALSEY HUNT, M.D.,† who has been chief of the Public Health Service Hospitals Division, has been appointed assistant surgeon general and assigned as associate chief, Bureau of Medical Services, Washington.

DEANE L. HUXTABLE,† director of vital statistics, Oregon State Board of Health, is the new chairman of the Public Health Conference on Records and Statistics, succeeding OSWALD K. SAGEN,* chief statistician, Bureau of Statistics, Illinois Department of Public Health.

PAUL H. JACOBSON, PH.D.,* has returned to his position as vital statistics analyst in the Statistical Bureau of the Metropolitan Life Insurance Company, New York, N. Y., after a leave of absence during which he completed work leading to his Ph.D.

GEORGE JAMES, M.D., M.P.H.,* assistant director, Division of Medical Services, New York State Department of Health, has been promoted to a new post of assistant commissioner for program development and evaluation in the executive office of the Department.

HARRY E. JORDAN, D.SC.,* secretary of the American Water Works Association, attended the Second International Water Supply Congress in Paris, June 9–13.

VIRGINIA KRATZ, M.D., health officer of Grant, Pendleton, and Owen Counties, Kentucky, has resigned to join her husband with the Army Medical Corps in Japan.

J. M. LATSKY, PH.D.,* of the staff of the Food and Agriculture Organization of the United Nations, who has been stationed in Rome, has resigned to accept appointment as chief nutrition adviser, State Nutrition Department, Impala House, Pretoria, Union of South Africa.

CHAUNCEY D. LEAKE, PH.D., of the University of Texas Medical Branch, Galveston, has been given a leave of absence for special work on old Egyptian medical papyri at the Institute for Advanced Study, Princeton, N. J.

DAVID B. LEE,* director of the Bureau of Sanitary Engineering of the Florida State Board of Health, was recently elected president of the Florida Engineering Society at its 36th Annual Convention held at Daytona Beach.

WILLIAM H. MACDONALD,† assistant director, Division of Local Health Services, New Jersey State Department of Health, was the guest of honor of the New Jersey Health Officers Association on the occasion of his 40th anniversary with the State Health Department. Mr. MacDonald was chief of the Bureau of Local Health Administration for more than 20 years prior to his present assignment.

JAMES C. MALCOLM, M.D.,* health officer of Alameda County, California, has received the 1951 Alameda County Good Government Award of the Oakland Junior Chamber of Commerce.

ELMER V. MCCOLLUM, PH.D.,* emeritus professor of biochemistry, Johns Hopkins University School of Hygiene and Public Health, at the 10th Annaal Meeting of the Kansas Public Health Association, May 6, was awarded its Samuel J. Crumbine Medal "in recognition of his discovery of Vitamins, A, B, and D, for his discovery of the importance of the trace elements, and for the profound influence he has exerted upon the sciences of biochemistry and nutrition."

RALPH A. MORGEN, B.S., PH.D., director of the Engineering and Industrial Experiment Station of the University of Florida, has been appointed to the staff of the Division of Mathematical, Physical and Engineering Sciences of the National Science Foundation, in charge of the Foundation's research support program in the engineering sciences.

ERWIN E. NELSON, M.D., medical director of the U. S. Food and Drug Administration of the Federal Security Agency, has resigned to become professor and director of the Department of Pharmacology of St. Louis University School of Medicine.

META PENNOCK NEWMAN,* formerly associate consultant in health education, National Foundation for Infantile Paralysis, has been appointed assistant to the medical editor, Eaton Laboratories, Inc., Norwich, N. Y.

JANS NIELSEN, medical director of the Radium Center, Copenhagen, Denmark, is lecturing at Cornell University Medical College and conducting research at the Memorial Center for Cancer and Allied Diseases, New York.

City, under the educational exchange program of the U. S. Department of State.

MILDRED C. J. PFEIFFER, M.D.,* has been appointed director of the Pennsylvania State Department of Health's new Division of Cardiovascular Diseases, with offices in Harrisburg.

JOHN J. PHAIR, M.D.,* head of the Department of Preventive Medicine and Industrial Health, University of Cincinnati College of Medicine, Cincinnati, Ohio, has accepted appointment as a part-time consultant to the Health Services Division of the Federal Civil Defense Administration in Washington.

GEORGE O. PIERCE, M.S.,* Minneapolis, associate professor of sanitary engineering at the University of Minnesota School of Public Health, has been appointed chief of the Branch of Environmental Sanitation, Pan American Sanitary Bureau, Washington, effective September 1. Professor Pierce will be on leave from the University.

GERALDINE PIPER,† supervisor of nutrition services for the Oklahoma State Department of Health, has resigned to accept a position with the U. S. Public Health Service, Washington, D. C.

MIKE PLISHNER, M.P.H.,* director of Veterans Services, National Tuberculosis Association, has been appointed executive director of the Queensboro Tuberculosis Association, New York succeeding the late CHARLES FRECK.†

FREDERICK PLOTKE, M.D.,* formerly venereal disease control officer in the Chicago Public Health Department, has been named to the newly created post of public health consultant to the Illinois Department of Public Welfare.

WILLIAM P. RICHARDSON, M.D.,* currently research professor of public health administration and head of the Department of Field Training in the University of North Carolina School of Public Health, has been appointed professor of preventive medicine and assistant dean in charge of continuation education.

EDWIN G. RILEY, M.D.,† a medical administrator of the medical care program conducted by the United Mine Workers of America, has been appointed deputy state and county health officer of Caroline County, Maryland.

RUTH RYDER, formerly field representative of the New York State Association for Crippled Children, has been appointed to the professional education division of the National Foundation for Infantile Paralysis.

C. A. SARGENT, M.D.,* health officer of Syracuse, N. Y., has been appointed by Mayor Thomas J. Corcoran as the one city employee member of the Syracuse Housing Authority.

G. G. SHIELDS, M.D., has been named district health officer for the 5th district of the Wisconsin State Board of Health, with headquarters in Wisconsin Rapids.

C. C. SLEMONS, M.D.,* director of the Grand Rapids (Mich.) Health Department, has retired. He has been succeeded by W. B. PROTHRO, M.D.,* for the past seven years health director of the Kalamazoo City-County Health Department.

CHESTER G. STARR,† director of rural health service, Missouri Health Council and retiring president of the Missouri Public Health Association, was awarded the W. Scott Johnson Award of the Missouri Public Health Association at its recent annual meeting.

MARY E. SOULES, M.D.,† former health officer, Clackamas County, Oregon, has been made health officer of Missoula City-County Health Department, Montana, which has been without a full-time health officer since 1947.

RHOBIA TAYLOR,† until recently head of special events for the National Institutes of Health, Washington, D. C., has joined the staff of the Committee on Careers in Nursing as director of field services with headquarters in New York City.

JAMES CLAUDE THOMPSON, M.P.H., PH.D.,† professor of biochemistry and nutrition and director of nutrition research in the new International Christian University of Tokyo, Japan, has been granted leave of absence to serve as medical consultant of WHO. He will coöperate with the Ministry of Health of the Government of Iran in planning and conducting a survey of the nutritional status of the people with a view to organizing a national nutrition service and an experimental nutrition center.

LAWRENCE C. TURNER, formerly editor and advertising manager of the *Hickman County Gazette*, has been appointed public health education field representative for western Kentucky counties of the Kentucky State Department of Health to give assistance to local health departments, especially with reference to Citizens Health Committees.

HENRY F. VAUGHAN, DR.P.H.,* dean of the School of Public Health, University of Michigan, has been appointed consultant in public health and sanitary engineering to the Air Surgeon, Air Materiel Command.

BARNET WACHS, D.D.S., has been appointed senior public health dentist, Bureau of Dental Health, Division of Medical Services, New York State Department of Health.

---

* Fellow.
† Member.

J. P. WARD, M.D.,* of Phoenix, Ariz., state director of public health, was the recipient of a $500 first prize in a contest conducted by Radio Station KOOL in Phoenix and the Arizona State Highway Department on how to prevent accidents on highways.

FRANK W. WEBSTER, executive secretary of the North Carolina Tuberculosis Association, has been appointed field secretary for the American Trudeau Society, medical section of the National Tuberculosis Society.

JULIUS L. WILSON, M.D., formerly head of the chest division of the Ochsner Foundation Clinic, New Orleans, has been named director of the Henry Phipps Institute and professor of medicine at the University of Pennsylvania, Philadelphia.

ABEL WOLMAN, DR.ENG.,* professor of sanitary engineering, Johns Hopkins University, was recently appointed consultant in sanitary engineering for the U. S. Air Force.

DEATHS

WILLIAM A. BOYLES,† bacteriologist, Research and Development Department, Chemical Corps, War Department (Laboratory Section).

GEORGE F. CATLETT, sanitary engineer with the North Carolina State Stream Sanitation Committee of the North Carolina State Board of Health, on March 22.

BUFORD G. HAMILTON, M.D.,† director, Missouri Division of Public Health and Welfare, Jefferson City, in early April (Health Officers Section).

EARLE P. JOHNSON, district manager for Wallace & Tiernan in the Pittsburgh, Pa., area on May 11 at the age of 49.

JAMES P. KRANZ, executive secretary of the Tennessee Tuberculosis Association for the past 36 years, on March 27 at the age of 70.

JOHN L. LAVAN, D.M., DR.P.H.,* of Wayne County Health Department, Eloise, Mich., on May 30 at the age of 61 (Health Officers Section).

FRANCES C. MONTGOMERY, R.N.,† of Florence, Colo., on March 26 (Public Health Nursing Section).

VIOLA RANDALL,† supervising public health nurse, San Francisco Department of Public Health, on May 9 (Public Health Nursing Section).

ERNEST G. SLOMAN, D.D.S., dean of the College of Physicians and Surgeons School of Dentistry, San Francisco, on April 30 in Madera of a heart attack at the age of 57.

CONFERENCES AND DATES

American Public Health Association. Headquarters, Public Auditorium, Cleveland, Ohio. Oct. 20–24.

Coming in July, August, September, and October:

American Academy of Pediatrics. Annual Meeting. Palmer House, Chicago, Ill. Oct. 20–23.

American Association of Medical Record Librarians. Shoreham Hotel, Washington, D. C. Oct. 13–17.

American Cancer Society. Annual Meeting. New York, N. Y. Oct. 23.

American Congress on Industrial Medicine. Rio de Janeiro, Brazil. Sept. 20–28.

American Dental Association. Annual Meeting. St. Louis, Mo. Sept. 8–11.

American Dietetic Association. Minneapolis, Minn. Oct. 21–24.

American Hospital Association. Philadelphia, Pa. Sept. 15–18.

American Pharmaceutical Association. Bellevue-Stratford Hotel, Philadelphia, Pa. Aug. 17–23.

American Society of Planning Officials. Copley-Plaza Hotel, Boston, Mass. Oct. 5–8.

American Sociological Society. Ambassador Hotel, Atlantic City, N. J. Sept. 3–5.

American Water Works Association:

- Kentucky-Tennessee Section. Andrew Johnson Hotel, Knoxville, Tenn., Sept. 15–17.
- Michigan Section. Post Tavern, Battle Creek. Sept. 24–26.
- Minnesota Section. Sioux Falls, S. D. Sept. 10–12.
- Missouri Section. Hotel Governor, Jefferson City. Sept. 21–23.
- New York Section. Saranac Inn, Upper Saranac Lake. Sept. 3–5.
- Ohio Section. Netherland Plaza Hotel, Cincinnati. Sept. 18–19.
- Rocky Mountain Section. Frontier Hotel, Cheyenne, Wyo. Sept. 16–17.
- Wisconsin Section. Hotel Loraine, Madison. Sept. 16–18.

Arthritis and Rheumatism Foundation. Annual Meeting, New York, N. Y. Oct. 6.

Civil Service Assembly of U. S. and Canada. Hotel New Yorker, New York, N. Y. Oct. 20–23.

Conference for Health Council Work. Annual Meeting. Cleveland, Ohio. Oct. 20–24.

Federation of Sewage and Industrial Wastes Associations. Hotel Statler, New York, N. Y. Oct. 6–9.

Florida Public Health Association. Jacksonville. Oct. 9–11.
Illuminating Engineering Society. National Technical Conference. Edgewater Beach Hotel, Chicago, Ill. Sept. 8–12.
Inter-American Congress of Public Health. Havana, Cuba. Sept. 27–Oct. 1.
International City Managers' Association. Kansas City, Mo. Sept. 28–Oct. 2.
International Union Against Tuberculosis and International Congress on Diseases of the Chest. Rio de Janeiro, Brazil. Aug. 24–30.
Minnesota Public Health Conference. St. Paul Hotel, St. Paul. Oct. 2–3.
National Association of Housing Officials. Hotel Statler, Buffalo, N. Y. Oct. 14–17.
National Council on Family Relations. New Brunswick, N. J. Aug. 31–Sept. 3.
National Medical Association, Inc. Meharry University, Nashville, Tenn. Aug. 11–15.
National Safety Congress and Exposition. Chicago, Ill. Oct. 20–24.
National Society for Crippled Children and Adults. Annual Meeting. Fairmont Hotel, San Francisco, Calif. Oct. 25–30.
North Carolina Public Health Association. Battery Park Hotel, Asheville, N. C. Oct. 9–11.
North Dakota Public Health Association. Dakota Hotel, Grand Forks. Oct. 10–11.
Pennsylvania Department of Health. Annual Conference. Pennsylvania State College. Aug. 25–29.
Pennsylvania Public Health Association. Bellevue-Stratford Hotel, Philadelphia. Oct. 3.
Washington State Public Health Association. Chinook Hotel, Yakima. Oct. 5–7.
World Medical Association. Athens, Greece. Oct. 12–16.

ALWAYS READY
TO HELP YOU STOP CONTAGION
DIXIE CUPS

VITA-FOOD
Reg. U.S. Pat. Off.
PURE DRIED
BREWERS' YEAST

No. 1 Red Label Debittered
VFC
No. 2 Green Label Hop Taste

A NATURAL SOURCE OF THE COMPLETE BREWERS' YEAST VITAMIN B COMPLEX AND NUTRITIONALLY COMPLETE PROTEIN.

IN FORM AS USED BY THE U. S. PUBLIC HEALTH SERVICE TO SUPPLY THE PELLAGRA-PREVENTIVE (P-P) FACTOR. (PUBLIC HEALTH REPORTS REPRINT 1009)

Samples on Request

VITAMIN FOOD COMPANY, INC.
187 Sylvan Ave. Newark 4, N. J.

Only Diversey has it!
Exclusive NEW Patented Chemical Compound
DIVERSEY
SPEC-TAK
REVOLUTIONARY NEW BOTTLE WASHING COMPOUND GIVES SCALE AND FILM CONTROL!

Unquestionably, SPEC-TAK exceeds by a wide margin the performance of any other bottle washing compound on the market today.

A new chemical combination, developed by Diversey and used for the first time in formulating a bottle washing compound, completely ties up and holds in solution scale and film-forming hard water salts. That's the secret of SPEC-TAK's unique action.

FREE—Write today for FREE copy of illustrated, Technical Brochure and other important information on new DIVERSEY SPEC-TAK!

THE DIVERSEY CORPORATION
1820 ROSCOE STREET • CHICAGO 13, ILL.
In Canada: The Diversey Corporation (Canada) Ltd., Port Credit, Ontario

The Association acknowledges with deep appreciation its indebtedness to its Sustaining Members whose annual dues help support the Association's general program

Sustaining Members of the American Public Health Association, Inc.

Alpha Kappa Alpha Sorority, Chicago, Ill.
American Aerovap, Inc., New York, N. Y.
American Bottlers of Carbonated Beverages, Washington, D. C.
American Can Company, New York, N. Y.
Ames Company, Inc., Elkhart, Ind.
Association for the Aid of Crippled Children, New York, N. Y.
George Baehr, M.D., New York, N. Y.
Borden Company, New York, N. Y.
Chlorine Institute, Inc., New York, N. Y.
Congress of Industrial Organizations, Washington, D. C.
Difco Laboratories, Inc., Detroit, Mich.
Diversey Corporation, Chicago, Ill.
Equitable Life Assurance Society of the United States, New York, N. Y.
John Hancock Mutual Life Insurance Company, Boston, Mass.
Hellige, Inc., Long Island City, N. Y.
Hoffmann-La Roche, Inc., Nutley, N. J.
Holland-Rantos Company, Inc., New York, N. Y.
International Association of Ice Cream Manufacturers, Washington, D. C.
International Association of Machinists, Washington, D. C.
International Equipment Company, Boston, Mass.
George G. Kirstein, New York, N. Y.
Lederle Laboratories Division, American Cyanamid Co., New York, N. Y.
Liberty Mutual Insurance Companies, Boston, Mass.
Life Insurance Co. of Virginia, Richmond, Va.
Lily-Tulip Cup Corporation, New York, N. Y.
George W. Merck, Rahway, N. J.
M & R Dietetic Laboratories, Inc., Columbus, Ohio
Metropolitan Life Insurance Company, New York, N. Y.
Modern Sanitation—Powell Magazines, Inc., New York, N. Y.
National Dairy Products Corporation, New York, N. Y.
National Farmers Union, Denver, Colo.
New York Hotel Trades Council and Hotel Association Health Center, Inc., New York, N. Y.
Orkin Institute of Industrial Sanitation, Atlanta, Ga.
Oval Wood Dish Corp., Tupper Lake, N. Y.
Owens-Illinois Glass Company, Toledo, Ohio
Prudential Insurance Company of America, Newark, N. J.
Sealright Company, Inc., Fulton, N. Y.
Sharp and Dohme, Inc., Glenolden, Pa.
E. R. Squibb and Sons, New York, N. Y.
Steiner Sales Company, Chicago, Ill.
Sun Life Insurance Company, Baltimore, Md.
Textile Workers Union of America, New York, N. Y.
Travelers Insurance Company, Hartford, Conn.
UAW–CIO (United Automobile, Aircraft and Agricultural Implement Workers of America), Detroit, Mich.
Union Central Life Insurance Company, Cincinnati, Ohio
Union Health Center, New York, N. Y.
United Steelworkers of America, Pittsburgh, Pa.
Upjohn Company, Kalamazoo, Mich.
Winthrop-Stearns, Inc., New York, N. Y.
Wyeth, Inc., Philadelphia, Pa.

Reprints from the American Journal of Public Health

Bibliography of Public Health Motion Pictures and Film Strips. [April, 1950.] 4 pp. 15c.
Chemicals Introduced in the Production of Foods. [May Year Book 1950.] 8 pp. 15c.
Congressional Hearings on Water-Borne Fluorides. [May, 1952.] 5 pp. 15c.
How to Find What Health Education Materials You're Looking For. [August, 1944.] Revised 1948. 4 pp. 10c.
Improvement of Local Housing Regulation Under the Law. [Nov., 1942.] 16 pp. 25c.
Lemuel Shattuck—Still a Prophet. [February, 1949.] 27 pp. 25c.
The Local Health Department—Services and Responsibilities. An official statement of the American Public Health Association. [1950.] 8 pp. 10c.
Medical Care in a National Health Program. An Official Statement of the American Public Health Association Adopted October 4, 1944. [December, 1944.] 6 pp. 5c.
Microbiological Methods for Frozen Dessert Ingredients. [1948.] 28 pp. 40c.
Opportunities of the Industrial Hygiene Section. C.-E. A. Winslow. [November, 1950.] 8 pp. Free.
Present Status of the Control of Air-borne Infections. [January, 1947.] Report of the Subcommittee for the Evaluation of Methods and Control of Air-Borne Infections. 10 pp. 25c.
Principles for Consideration in Judging the Probable Effectiveness of Federal Legislation Designed to Improve the Health of Children of School Age. [April, 1948.] 4 pp. 10c.
Quality of Medical Care in a National Health Program. A Statement by the Subcommittee on Medical Care. Dean A. Clark, Chairman. [July, 1949.] 28 pp. 10c each, 100 copies $7.50
Recent Observations of the British National Health Service. [May, 1949.] 6 pp. 15c.
Recommended Practices for the Control of Poliomyelitis. [September, 1949.] 4 pp. 5c.
Sources of Supplementary Materials for Health Instruction. [November, 1949.] 12 pp. 25c.
Suggested Standards for Health Services in Secondary Schools. [May Year Book 1952.] 12 pp. 15c.
Ventilation and Atmospheric Pollution. E. R. Hayhurst, Chairman. [July, 1943.] 7 pp. 15c.

Order from the Book Service — Advance Payment is Requested

AMERICAN PUBLIC HEALTH ASSOCIATION, Inc.

1790 Broadway at 58th Street New York 19, N. Y.

Publications of the A.P.H.A.

American Journal of Public Health and the Nation's Health. Single copies..... $1.00
A. P. H. A. Year Book 1951–1952..... $1.50
An Appraisal Method for Measuring the Quality of Housing: A Yardstick for Health Officers, Housing Officials and Planners:
Part I. Nature and Uses of the Method. (1945.) 71 pp..... $1.00
Part II. Appraisal of Dwelling Conditions. Director's Manual; Field Procedures; Office Procedures (1946)..... $5.00
Part III. Appraisal of Neighborhood Environment. (1950.) 132 pp..... $3.00
Basic Principles of Healthful Housing. 2nd ed. reprinted 1950. Report of the Committee on the Hygiene of Housing. 34 pp..... .50
Control of Communicable Diseases in Man, 7th ed., 1950. 159 pp..... .40
Diagnostic Procedures and Reagents. Technics for the Laboratory Diagnosis and Control of the Communicable Diseases. 3rd ed., 1950. 589 pp..... $5.50
Diagnostic Procedures for Virus and Rickettsial Diseases. 1948. 347 pp..... $4.00
Evaluation Schedule. For use in the study and appraisal of community health programs. 1947. .40
General Medical Care Programs in Local Health Departments. Milton Terris and Nathan Kramer. 1951. 129 pp..... .50
Glossary Water and Sewage Control Engineering. 1949. 274 pp. Paper cover..... $1.00
Health Practice Indices 1947–1948. A collection of charts showing the range of accomplishments in various fields of community health service. 90 pp..... $1.00
Methods for Determining Lead in Air and in Biological Materials. 1944. 41 pp..... .50
Occupational Lead Exposure and Lead Poisoning. 1943. 67 pp..... .50
Panum on Measles. By P. L. Panum (Translation from the Danish). Delta Omega ed., 1940. 111 pp..... $2.50
Proceedings of the National Conference on Local Health Units. Ann Arbor. Supplement to A.J.P.H., Jan. 1947. 160 pp. Covered..... $1.00
Proceedings of the Princeton Conference on Local Health Units, Sept. 1947..... .50
Proposed Housing Ordinance. Committee on the Hygiene of Housing, 1952. 24 pp..... .50
Proposed Sanitary Code. Part III of a Study of Sanitation Services..... $2.50
Public Health Career Pamphlets:
Public Health—A Career with A Future. Revised edition 1949..... .15
Industrial Hygiene 1949 } 1–5 copies free;
The Engineer and Sanitarian 1949 } 6–99 copies ea. 10¢
Statistician 1950 }
Selected Papers of Haven Emerson. 1949. 507 pp..... $3.00
"Shattuck Report", The. Report of the Sanitary Commission of Massachusetts: 1850. 321 pp... $4.50
Standard Methods for the Examination of Dairy Products. 9th ed., 1948. 373 pp..... $4.00
Laboratory Outline of Chapter II, 15 pp... .35
Microbiological Methods for Milk and Cream, 60 pp..... .75
Photographic Sediment Chart. 1948 ed..... $1.50
Standards for Healthful Housing: A.P.H.A. Committee on the Hygiene of Housing:
Part I. Planning the Neighborhood. 1948. 89 pp..... $2.50
Part II. Planning the Home for Occupancy, 1950. 90 pp..... $2.50
Part III. Construction and Equipment of the Home. 1951. 78 pp..... $2.50
The set, handsomely boxed..... $7.50
Standard Methods for the Examination of Water and Sewage. 9th ed. 1946. 286 pp..... $4.00
Swimming Pools and Other Public Bathing Places. Recommended Practice for Design, Equipment and Operation of, 1949. 56 pp... .35
35 Year Index of the American Journal of Public Health. Years 1911 to 1945. 340 pp. Buckram Ed. $7.00. Paper Ed..... $3.75
What's the Score? Committee on Administrative Practice. A.P.H.A. 1950. 52 pp..... .50

Order from the Book Service — Advance Payment is Requested

AMERICAN PUBLIC HEALTH ASSOCIATION, Inc.

1790 Broadway at 58th Street New York 19, N. Y.

DIRECTORY OF EXHIBITS

80th Annual Meeting, American Public Health Association

October 20–24, 1952

Public Auditorium, Cleveland, Ohio

ALOE SCIENTIFIC, DIVISION OF A. S. ALOE & Co., St. Louis, Mo., Booths 906 and 907.

AMERICAN AEROVAP, INC., New York, N. Y. Booth 903.

AMERICAN BOTTLERS OF CARBONATED BEVERAGES, Washington, D. C., Booth 631.

AMERICAN CAN CO., New York, N. Y., Booths 337 and 338.

AMERICAN HOSPITAL SUPPLY CORP., Evanston, Ill., Booths 502 and 503.

AMERICAN INSTITUTE OF BAKING, Chicago, Ill., Booth 336.

AMERICAN JOURNAL OF NURSING, New York, N. Y., Booth 303.

AMERICAN TOBACCO CO., New York, N. Y., Booths 512 and 513.

AMES CO., Elkhart, Ind., Booth 408.

ASSOCIATION CONVENTIONS EXHIBITS, New York, N. Y., Booth 912.

ASSOCIATION OF AMERICAN UNIVERSITY PRESSES, New York, N. Y., Booth 402.

BABY DEVELOPMENT CLINIC, Chicago, Ill., Booth 227.

BALTIMORE BIOLOGICAL LABORATORY, Baltimore, Md., Booth 228.

BECTON, DICKINSON & CO., Rutherford, N. J., Booth 229.

BEST FOODS, INC., New York, N. Y., Booth 412.

BLAKISTON CO., Philadelphia, Pa., Booth 209.

BORDEN CO., New York, N. Y., Booth 302.

BRISTOL LABORATORIES, INC., New York, N. Y., Booth 908.

BRISTOL-MYERS CO., New York, N. Y., Booth 511.

BUILDERS PROVIDENCE CO., Providence, R. I., Booth 204.

CAMEL CIGARETTES, MEDICAL RELATIONS DIVISION, New York, N. Y., Booth 202.

CARNATION CO., Los Angeles, Calif., Booth 529.

CEREAL INSTITUTE, INC., Chicago, Ill., Booth 413.

CERTIFIED BLOOD DONOR SERVICE, Jamaica, N. Y., Booth 605.

CHILEAN IODINE EDUCATIONAL BUREAU, INC., New York, N. Y., Booths 305 and 306.

CHURCH & DWIGHT CO., New York, N. Y., Booth 335.

CLAY-ADAMS CO., New York, N. Y., Booth 435.

CLER-SITE CO., Chicago, Ill., Booth 627.

COCA-COLA CO., Atlanta, Ga., Booths 207 and 208.

CORNING GLASS WORKS, Corning, N. Y., Booth 504.

CREAM OF WHEAT CORP., Minneapolis, Minn., Booth 411.

DIFCO LABORATORIES, INC., Detroit, Mich., Booth 405.

DIVERSEY CORP., Chicago, Ill., Booth 428.

ECONOMICS LABORATORY, INC., St. Paul, Minn., Booth 225.

EVAPORATED MILK ASSOCIATION, Chicago, Ill., Booth 406.

FISHER SCIENTIFIC CO., Pittsburgh, Pa., Booth 914.

GENERAL MILLS, INC., Minneapolis, Minn., Booth 438.

GERBER PRODUCTS CO., Fremont, Mich., Booth 528.

GIVEN MANUFACTURING CO., Los Angeles, Calif., Booth 215-S.

HEINZ CO., H. J., Pittsburgh, Pa., Booth 328.

HELLIGE, INC., Long Island City, N. Y., Booth 427.

HOBART MANUFACTURING CO., Troy, Ohio, Booth 201.

HOMEMAKERS' PRODUCTS CORP., New York, N. Y., Booth 630.

INTERNATIONAL CELLUCOTTON PRODUCTS CO., Chicago, Ill., Booth 538.

JOHN HANCOCK MUTUAL LIFE INSURANCE CO., Boston, Mass., Booth 426.

KELLOGG CO., Battle Creek, Mich., Booth 304.

KEYSTONE VIEW CO., Meadville, Pa., Booth 206.

KIMBLE GLASS CO., Toledo, Ohio, Booth 401.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID CO., New York, N. Y., Booths 232 and 233.

LEGGE CO., INC., WALTER G., Los Angeles, Calif., Booth 507.

LICENSED BEVERAGE INDUSTRIES, INC., New York, N. Y., Booth 224.

DIRECTORY OF EXHIBITS (cont.)

80th Annual Meeting, American Public Health Association

October 20–24, 1952

Public Auditorium, Cleveland, Ohio

LILY-TULIP CUP CORP., DOMESTIC AND FOREIGN SALES DIVISIONS, New York, N. Y., Booths 432, 433 and 434.

LIPPINCOTT CO., J. B., Philadelphia, Pa., Booth 537.

LORILLARD CO., INC., P., New York, N. Y., Booths 901 and 902.

M & R LABORATORIES, Columbus, Ohio, Booth 508.

MACGREGOR INSTRUMENT CO., Needham, Mass., Booth 334.

MACMILLAN CO., New York, N. Y., Booth 535.

MALTEX CO., THE, Burlington, Vt., Booth 407.

MCGRAW-HILL BOOK CO., New York, N. Y., Booth 909.

MODERN SANITATION, New York, N. Y., Booth 436.

MONSANTO CHEMICAL CO., St. Louis, Mo., Booths 904 and 905.

MOSBY CO., C. V., St. Louis, Mo., Booths 505 and 506.

NATIONAL ASSOCIATION OF MARGARINE MANUFACTURERS, Washington, D. C., Booth 431.

NATIONAL DAIRY COUNCIL, Chicago, Ill., Booth 333.

NATIONAL DRUG CO., Philadelphia, Pa., Booth 329.

NATIONAL LIVE STOCK & MEAT BOARD, Chicago, Ill., Booth 226.

NOPCO CHEMICAL CO., Harrison, N. J., Booth 913.

ORTHO PHARMACEUTICAL CORP., Raritan, N. J., Booth 311.

OVAL WOOD DISH CORP., Tupper Lake, N. Y., Booth 307.

PARKE, DAVIS & CO., Detroit, Mich., Booth 603.

PEPSI-COLA CO., New York, N. Y., Booths 625 and 626.

PET MILK CO., St. Louis, Mo., Booths 409 and 410.

PHILIP MORRIS & CO., LTD., INC., New York, N. Y., Booth 604.

PHOTOSTAT CORP., Providence, R. I., Booth 911.

POWERS X-RAY PRODUCTS, INC., Glen Cove, N. Y., Booth 203.

PROCTER & GAMBLE CO., Cincinnati, Ohio, Booth 403.

%PROPORTIONEERS, INC.%, Providence. R. I., Booths 509 and 510.

PROTECTO PRODUCTS CO., INC., Pomona, Calif., Booth 536.

PUBLIC HEALTH COMMITTEE OF THE PAPER CUP & CONTAINER INSTITUTE, New York, N. Y., Booths 309 and 310.

PUTNAM'S SONS, G. P., New York, N. Y., Booth 430.

SAUNDERS CO., W. B., Philadelphia, Pa., Booth 501.

SCHENLEY LABORATORIES, INC., New York, N. Y., Booth 609.

SEALRIGHT CO., INC., Fulton, N. Y., Booths 530, 531, 607 and 608.

SEALY, INC., Chicago, Ill., Booth 330.

SELZ ORGANIZATION, INC., LAWRENCE H., Chicago, Ill., Booth 332.

SEVEN-UP CO., St. Louis, Mo., Booths 312 and 313.

SMITH CORP., A. O., Toledo, Ohio, Booth 205.

SONOTONE CORP., Elmsford, N. Y., Booth 610.

SQUIBB & SONS, E. R., New York, N. Y., Booths 532, 533 and 534.

STERWIN CHEMICALS, INC., New York, N. Y., Booth 404.

TAMPAX, INC., New York, N. Y., Booth 231.

TECHNICON CO., New York. N. Y., Booth 910.

TODAY'S HEALTH, AMERICAN MEDICAL ASSOCIATION, Chicago, Ill., Booth 137.

U. S. TOBACCO CO., New York, N. Y., Booth 327.

WALLACE & TIERNAN CO., INC., Newark, N. J., Booths 601 and 602.

WISCONSIN ALUMNI RESEARCH FOUNDATION, New York, N. Y., Booth 429.

WYETH, INC., Philadelphia, Pa., Booth 230.

"...any scaling alopecia should be considered TINEA CAPITIS until proved otherwise" (1)

This striking statement appeared in The Manual of Clinical Mycology (1), prepared under the auspices of The National Research Council.

In Medicine of the Year, Livingood states "In the treatment of Tinea Capitis due to M. Audouini the common resistant scalp fungous infection . . . SALUNDEK, . . . is one of the best preparations now available."

Even with clinic patients 50% cures in 8 to 14 weeks have been reported.

OINTMENT SALUNDEK

Brand of ZINCUNDESAL

combines two highly effective antimycotics, Undecylenic Acid and Salicylanilide (the former being growth inhibiting even at 0.003% and the latter at 0.0004%). This combination has shown a therapeutic effectiveness superior to what could be expected from the activity of these ingredients when used alone. Through the use of a specially devised ointment base, penetration into the hair follicle is enhanced.

The important advantage of SALUNDEK is that it is well tolerated—in spite of its large amounts of active ingredients.

Composition: Undecylenic Acid (in part as the zinc salt) 22%
Salicylanilide 5%
In a carbowax base containing an effective penetrant.

Available at all pharmacies
Tubes of 1 oz. Jars of 1 lb.

Samples and literature sent on request

W&T

Pharmaceutical Division

WALLACE & TIERNAN PRODUCTS, INC.
Belleville 9, N. J., U.S.A.

PS-4

Why Over 3,500 TB Case-Finding Projects Annually Use POWERS X-RAY SERVICE.

- **POWERS SERVICE IS COMPLETE!** Powers relieves project sponsors of *all* technical problems. Our experienced technicians work to the sponsor's schedule, with units able to take as many as 200 chest x-rays an hour. We deliver fully processed x-rays, with a viewer, to sponsor's roentgenologist.
- **LOWER IN COST!** The large volume of x-rays Powers handles nationally enables us to cut overhead costs to a minimum for each individual project.
- **EFFICIENT!** Our 20 years of experience in chest x-ray surveys from Maine to Texas have taught us to do the job quickly and effectively under many diverse conditions.
- **FLEXIBLE!** According to the sponsor's requirements, Powers offers either the full-size roll paper method or the 70 mm photofluorographic method—and operates either portable units or mobile units with generators.

Reg. T.M. POWERS X-RAY PRODUCTS

Our technical advisory service is available without obligation. Write before you plan a TB Case-Finding Project!

POWERS X-RAY PRODUCTS, INC.
Group Radiography
GLEN COVE LONG ISLAND N. Y.

the ONLY NATIONAL DOG FOOD WITH BOTH KIBBLE PLUS MEAL

it's ideal for laboratory dogs because of:

1. CONSTANT NUTRITIONAL VALUE.
This is important to investigators planning research using animals over long periods of time. Ingredients are carefully tested so that each bag is alike in formula.

2. HIGH PALATABILITY.
Kibble plus meal combines the palatable qualities of crisp, crunchy bits of biscuits with rich, nutritious meal containing some 24 elements dogs need.

3. EASY—CLEAN FEEDING.
This mixture of meal with kibble makes feeding easier for the busy technician. The broken biscuits help keep the mixture from packing in the feed pans and from sticking to the roof of a dog's mouth.

Buy Purina Dog Chow Kibbled Meal from your local Purina Store. Depend upon it for a constant diet.

RALSTON PURINA COMPANY
St. Louis 2, Missouri

APPLICATION FOR MEMBERSHIP

NAME.....Birth Date.....
(please print)

MAILING ADDRESS.....
(street) (city or town) (state)

EDUCATION (give schools, dates and degrees; if no degrees received, say "none")

.....

PROFESSIONAL SOCIETIES
OF WHICH A MEMBER.....

EXPERIENCE (show recent positions, giving titles, names of organizations and years of tenure)

.....

.....

PRESENT OCCUPATION.....
(title of position)

.....
(name of organization) (part or full time) (date employed)

Remarks to describe character of work if not indicated by title.....

.....

AMERICAN PUBLIC HEALTH ASSOCIATION, Inc.
1790 Broadway at 58th Street New York 19, N. Y.

Please complete application on reverse side

FOR

Heterophile Antibody Tests
Detection of Infectious Mononucleosis

USE

CERTIFIED

Preserved Sheep Cells
Guinea Pig Kidney Antigen
Beef Red Cell Antigen

CERTIFIED BLOOD DONOR SERVICE

146–16 Hillside Avenue **Jamaica 2, New York**

(Continued from previous page)

SECTION IN WHICH MEMBERSHIP IS DESIRED (choose only one)

☐ Health Officers	☐ Engineering	☐ Maternal and Chi'd Health	☐ Epidemiology
☐ Laboratory	☐ Industrial Hygiene	☐ Public Health Education	☐ School Health
☐ Statistics	☐ Food and Nutrition	☐ Public Health Nursing	☐ Dental Health
		☐ Medical Care	☐ Unaffiliated

SPONSORS

Signature..... Address.....

Signature..... Address.....

NOTE: Sponsors must be two members and/or Fellows of the American Public Health Association. It is essential that your application be sponsored, but if you cannot obtain the signatures of two persons affiliated with the Association, write their names and addresses in the spaces above and we will get in touch with them for you.

DUES A remittance for $..... is enclosed. Dues will be paid by .....
..... and a bill should be sent to that address. Annual membership dues are $10.00 ($10.50 Canada; $11.00 foreign countries exclusive of Latin America) and include a subscription to the American Journal of Public Health as well as the other services maintained by the Association. The membership year is the same as the calendar year. Members joining during the first six months of the year will receive the Journal from January onward. Members joining after July 1st are requested to pay $15.00 (Canada $15.75, foreign $16.50) covering the latter half of the current year and the whole of the ensuing year, the Journal beginning with July of the current year.

DATE..... SIGNATURE.....

CONTACT SPRAY "B"
MILL CREEK
INSECTICIDES
RESIDUAL SPRAYS "R"

SO EFFECTIVE!
Pyrethrins for quick knockdowns—Hydrogenated Rotenone* for paralytic kill.
*Exclusive in Mill Creek Insecticides.

Insect Control

SO ECONOMICAL!
Simple, time saving application.

...with comparative LOW TOXICITY!
Harmless* to humans and warm blooded animals. Will not taint or contaminate food products or ingredients with prescribed application.
*Except for allergics and similar types of intolerance.

Write Department (P) for descriptive folder and name of nearest distributor or call for representative.

MCP MILL CREEK PRODUCTS CO., INC.
50 West 40th Street • New York 19, N. Y.
JUdson 6-3367

ARE YOU FAMILIAR WITH

CELLU ALLERGY FOODS

ALLERGY DIETS

Wheat-Free
Milk-Free
Egg-Free

★ Many tasty foods can be substituted for those prohibited. Many are described in the *New Cellu Allergy Booklet* which shows also lists of foods allowed and foods proscribed in wheat-free, egg-free, and milk-free diets.

SEND FOR NEW FREE BOOKLET

CELLU PURPOSEFULLY PREPARED *Dietary Foods*
CHICAGO DIETETIC SUPPLY HOUSE Inc.

Directory of Health Service

BARKER & WHEELER
Engineers
Water Supply, Sanitary Investigations, Sewerage, Power Systems, Sewage Treatment, Valuations and Rates, Reports, Design, Supervision of Construction.
36 State Street, Albany 7, N. Y. — 11 Park Place, New York City 7

BLACK & VEATCH
Consulting Engineers
Water — Sewage — Electricity — Industry
Reports, Design, Supervision of Construction, Investigations, Valuation and Rates.
4706 Broadway, Kansas City 2, Mo.

THE DICKMAN LABORATORIES
Albert Dickman, Ph.D., *Director*
BLOOD TYPING
SEROLOGY
ROUTINE CLINICAL ANALYSES
1415 W. Erie Avenue, Philadelphia 40, Pa.

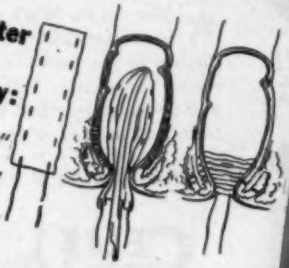
EMERSON VENABLE, P. E.
Chemist and Chemical Engineer
Atmospheric Pollution.
Industrial Hygiene Chemical Warfare
6111 Fifth Ave., Pittsburgh 32, Pa.

PROFESSIONAL EXAMINATION SERVICE
A Personnel Administration Service in the Field of Public Health
Available to State and Local Health Departments and Merit Systems
Examinations Field Consultation
American Public Health Association, Inc.
1790 Broadway, New York 19, N. Y.

PACKING as for abscess cavity:

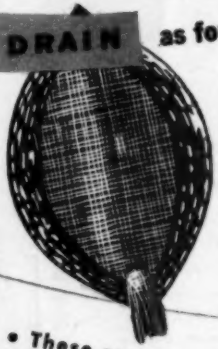
Cavity is fully but not tightly packed to permit healing from the bottom — and is repacked weekly, using aseptic precautions.

PLUG as after **hemorrhoidectomy:**



Petrolatum gauze "sponge" is (a) threaded as shown, (b) inserted beyond sphincter, (c) and then pulled down snugly against bleeding points.

DRAIN as for septic wounds:



Non-toxic, non-adherent, non-macerating—will not cause pressure necrosis or erosion...increasingly used in place of rubber drainage tubes.

• **These ready-made dressings now available in three sizes:**

No. 1: 3" x 36" (6 in carton)
No. 2: 3" x 18" (12 in carton)
No. 3: 6" x 36" (6 in carton)

Obtainable from your regular source of supply

Specified for "1001" SURGICAL USES

Vaseline

TRADE-MARK

Sterile Petrolatum Gauze Dressings

Adopted as standard procedure by surgeons, as preferred matériel by ORS's and CSS's, these superior dressings are used as wound coverings and packings, as plugs and drains—as well as being the most widely-used definitive dressing for burns and abrasions.

CHESEBROUGH MFG. CO., Cons'd
Professional Products Division
NEW YORK 4, N. Y.

Insist on these superior ready-made dependably sterile dressings—for your use in indicated surgery, major or minor, emergency or elective

VASELINE is the registered trade-mark of the Chesebrough Mfg. Co., Cons'd

new convenience in broad-spectrum therapy

Easily swallowed sugar-coated Terramycin tablets introduce new flexibility in prolonged courses of administration and are particularly suited to effective yet tolerated therapy during pediatric practice. Terramycin tablets to other oral forms.

Supplied: 250 mg. tablets, bottles of 16 and 100; 100 mg. and 50 mg. tablets, bottles of 25 and 100.

Terramycin tablets

world's largest producer of antibiotics

Pfizer

DIFCO

for Microbiological Assay

of

VITAMINS and AMINO ACIDS

Bacto dehydrated media containing all the necessary nutriments and growth factors for the microbiological assay of vitamins and amino acids are now available from Difco. These basal media require only the addition of graduated amounts of the substance under assay to obtain linear growth of the test organism for construction of the standard curve. The vitamin or amino acid content of the material under assay is determined by adding appropriate concentrations of the test substance to the basal medium and comparing the growth response obtained with the standard.

BACTO-FOLIC ACID ASSAY MEDIUM
BACTO-NIACIN ASSAY MEDIUM
BACTO-PANTOTHENATE ASSAY MEDIUM
BACTO-PYRIDOXINE ASSAY MEDIUM
BACTO-RIBOFLAVIN ASSAY MEDIUM
BACTO-THIAMIN ASSAY MEDIUM
BACTO-TRYPTOPHANE ASSAY MEDIUM
BACTO-B_{12} ASSAY MEDIUM D S P

The method employed in carrying stock cultures of the test organisms and preparing the inoculum for microbiological assay is important. The following media have been developed especially for carrying stock cultures and for preparation of the inoculum.

BACTO-MICRO ASSAY CULTURE AGAR
BACTO-MICRO INOCULUM BROTH
BACTO-NEUROSPORA CULTURE AGAR

BACTO-VITAMIN FREE CASAMINO ACIDS, dehydrated, is an acid hydrolysate of vitamin free casein prepared especially for laboratories investigating microbiological assay of vitamins.

Descriptive literature is available upon request.

Specify "DIFCO"

The Trade Name of the Pioneers in the Research and Development of Bacto-Peptone and Dehydrated Culture Media

DIFCO LABORATORIES

DETROIT 1, MICHIGAN